THE

NATURAL HISTORY

OF

BIRDS.

FROM THE FRENCH OF THE

COUNT DE BUFFON.

ILLUSTRATED WITH ENGRAVINGS;

AND A

PREFACE, NOTES, AND ADDITIONS,

BY THE TRANSLATOR.

IN NINE VOLUMES.

VOL. I.

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PREFACE,

BY THE TRANSLATOR.

FEW writers have been more juſtly admired for originality, and grandeur of conception, than the celebrated Comte de Buffon. It was his lively eloquence that firſt reſcued Natural Hiſtory from barbariſm, and rendered it an engaging and popular ſtudy. With concern and indignation he beheld the faireſt of all the ſciences cramped by artificial ſyſtems, encumbered by a coarſe and obſcure jargon, and disfigured by credulity and ignorance. He was determined to reſtore and decorate the fabric. Royal munificence happily ſeconded his views; and he was entruſted with the direction of the fineſt cabinet in Europe. His lofty genius burſt from the ſhackles of method; he caught with ardour the varied magnificence of Nature's plan; and, with a maſterly pencil, dipt in rich and glowing colours, he traced the animated picture. His

elegant and ſpirited diction adorns whatever ſubject he treats; his various and extenſive learning at once pleaſes and inſtructs. His graceful turn of ſentiments engages our affections; the ſublimity of his deſcriptions commands our admiration; and if the exuberance of his fancy has ſometimes laid him open to cenſure, we are diſpoſed to overlook his errors for the brilliancy of his compoſition.

His Theory of the Earth was firſt publiſhed in 1744; his Hiſtory of Man ſoon followed; but that of Quadrupeds was not completed till 1767. The Hiſtory of Birds was next to be undertaken, a taſk attended with peculiar difficulties. The ſpecies of Birds are at leaſt ten times more numerous than thoſe of Quadrupeds, and are ſubject to endleſs varieties. Their mode of life expoſes them to the immediate influence of the ſeaſons; in a large proportion of them the migrations to remote climates produce important alterations on their external appearance; and their hot temperament ſometimes perverts their inſtincts, and gives birth to unnatural progeny that ſerve to increaſe the confuſion. The diſpoſitions and œconomy of Birds are in a great meaſure removed from obſervation; and our knowledge, with regard to them, is neceſſarily ſcanty and imperfect. But M. de Buffon was not to be deterred by the difficulty and extent of the undertaking. The correſpondents of the king's cabinet

cabinet continued to tranſmit numerous communications, and ſpecimens from all parts of the world. Above eighty artiſts were under the direction of the younger M. Daubenton, employed five years in the drawing, engraving, and colouring, of upwards of a thouſand Birds. But the commencement of the work which theſe were intended to illuſtrate was delayed two years, by reaſon of a ſevere and tedious indiſpoſition, which during that ſpace afflicted the excellent Naturaliſt. And after he had recovered his health, he reflected that at his advanced period of life he could not reaſonably expect to be able to accompliſh the Hiſtory of Birds, and alſo that of Minerals, in which he had already made ſome advances. He judged it expedient therefore to have recourſe to the aſſiſtance of his friends; and he was peculiarly fortunate in the choice of the learned and eloquent M. Gueneau de Montbeillard, who cheerfully undertook the laborious taſk, and compoſed the greateſt part of the two firſt volumes of the Hiſtory of Birds, which appeared in 1771, under the name however of M. de Buffon. In his complexion of thought and mode of expreſſion, M. de Montbeillard followed ſo cloſely his illuſtrious aſſociate, that the Public could not perceive any change. It was now proper to throw off the maſk; and in the publication of the four ſubſequent volumes, each author prefixed his name to his own articles. The

third volume was nearly printed when new aſſiſtance was received from the communications of James Bruce, Eſq. of Kinnaird. That accompliſhed and adventurous traveller in his return from Abyſſinia paſſed ſome days with M. de Buffon at Paris. The Count was filled with admiration on ſeeing the numerous and elegant drawings which Mr. Bruce had made of natural objects; and on ſeveral occaſions he mentions the explorer of the ſource of the Nile in terms the moſt flattering and reſpectful. After the publication of the ſixth volume in 1781, M. de Montbeillard was deſirous of devoting the whole of his leiſure in compoſing the Hiſtory of Inſects, which had become his favourite ſtudy. The three remaining volumes were therefore written by M. de Buffon himſelf; though he acknowledges that the Abbé Bexon had collected the nomenclature, formed moſt of the deſcriptions, and communicated ſeveral important hints. The work was completed in 1783; and as only a few copies of the Illumined Plates were on ſale, and theſe extremely coſtly, a ſmall ſet of engravings were made to accommodate ordinary purchaſers. M. de Buffon had about the ſame time finiſhed his Hiſtory of Minerals. He now entertained views of compoſing the Hiſtory of Vegetables, in which delightful ſubject his ingenuity, his taſte, and his erudition, eminently qualified him to ſhine; but unfortunately for the Public the project was defeated

by the death of that great man on the 16th of April 1788.

To expatiate on the advantages ariſing from an acquaintance with Natural Hiſtory might be deemed unneceſſary. It affords an elegant and rational ſpecies of entertainment; and as it requires no previous courſe of ſtudy, it ſeems admirably fitted to captivate the minds of youth, and to fix their attention. It diſpels many early prejudices, raiſes and warms their opening fancy, enlarges the circle of their ideas, and leads by eaſy and flowery ſteps to the purſuit of the abſtruſer ſciences. It conveys uſeful and intereſting information reſpecting the ſituation of the various countries, their climate, their productions, and the manners and œconomy of the inhabitants. But above all, the contemplation of that order and deſign, ſo conſpicuous in the works of Nature, allays the ſtormy paſſions, elevates the ſoul to virtue and happineſs, and exhibits the moſt enchanting proſpects of that wiſdom and power which upholds and conducts the univerſe.

Books of Natural Hiſtory ſeem, more than any others, to require tranſlation. They muſt unavoidably abound with uncommon words and phraſes, which frequently create difficulties even to proficients in the language; the vivacity of the impreſſion is at any rate weakened; and the reading, inſtead of faſcinating by the pleaſure which it is calculated to afford, degenerates per-

haps into an irkſome taſk. The names of quadrupeds, of birds, of fiſhes, of inſects, and reptiles, of plants, and of minerals, are beſides hardly ever explained accurately in dictionaries, and are frequently omitted altogether. There are many perſons who might be deterred by the expence from purchaſing the original, or who, from their ſituation and circumſtances in life, have not had leiſure or opportunities of acquiring a competent knowledge of the language in which it is compoſed. To accommodate this numerous claſs of readers, to increaſe the circulation of uſeful and popular works, is the chief object of tranſlation. A diffuſion of taſte and information forms the diſtinguiſhing feature of our own times. Men of a gloomy or ſplenetic temper may declaim againſt the frivolouſneſs of the age: to decry the preſent and extol the paſt, is indeed an inveterate, an incurable malady. Other periods have produced great and ſhining characters, who ſoared above the prejudices and narrow views of their contemporaries. But a liberality of ſentiment, unknown to our rude forefathers, now generally prevails; the ſweeteſt of all the virtues, and that which contributes the moſt to alleviate the ills and heighten the joys of life, humanity and fellow-feeling, has ſhed its lovely influence on all ranks; and never did the ſun behold ſuch a large portion of mankind ſo enlightened, ſo reſpectable, and ſo happy.

The

The great expence attending the publication of an extenſive work, adorned with numerous plates, has long prevented Buffon's Natural Hiſtory from appearing in an Engliſh dreſs. It is only a few years ſince a tranſlation of the firſt part was given by Mr. Smellie of Edinburgh; and the favourable reception which this has met with, atteſts ſufficiently its merit. But that gentleman has not choſen to complete the taſk. The Hiſtory of Minerals indeed, though replete with curious and often ſolid information, is addreſſed to a narrow circle of readers. But the Hiſtory of Birds poſſeſſes every quality that could recommend it to the public: it exhibits a clear and comprehenſive view of the knowledge acquired in Ornithology, ſcattered through a multiplicity of volumes and in various languages; it diſcuſſes and elucidates, with critical accuracy, the numerous controverted points; it reduces the whole to ſimplicity, order, and elegance; and, by large additions of valuable matter, it greatly extends the bounds of the ſcience.

In tranſlating this work, I have ſtudied to transfuſe the ſpirit of the author into our language. I was aware of the tendency to adopt foreign idioms, and I was ſolicitous to avoid that cenſure. How far I have ſucceeded, the public will judge. Zoological deſcriptions aim not only at perſpicuity, but require the moſt minute accuracy; in ſuch parts, therefore, where the ſubject aſſumes a loftier tone,

tone, I have ſtuck cloſe to the original. I have endeavoured to obſerve a correſponding elevation of ſtyle. There are ſome ſprightly turns in the French which the maſculine character of our language will not admit; but theſe inferior beauties are amply compenſated by the ſtrength and dignity of its expreſſion. The philoſophy likewiſe of that ingenious people has a certain diffuſe ſuperficial caſt, not altogether ſuited to the manly ſenſe of the Britiſh nation. The tranſlator ſhould have a regard to the taſte of his countrymen whom he addreſſes; and, on proper occaſions, he may, with advantage, be permitted to abridge and condenſe.

I have diſcovered in the text a few inaccuracies which I have taken the liberty to correct. A few notes which I have ſubjoined, will ſerve to elucidate the paſſages. I have conſulted the lateſt authors who have either written expreſsly on Ornithology, or who have occaſionally handled the ſubject; and the additions which I have thereby been enabled to make, will, I truſt, prove not unacceptable. I have beſtowed particular attention to the nomenclature, which it is the principal aim of ſyſtems to fix and aſcertain. Theſe productions will, no doubt, rank very low in the eſtimation of the philoſopher; yet they muſt ſtill be regarded as uſeful helps towards the ſtudy of Natural Hiſtory. It was the want of them that ſo often occaſions ſuch obſcurity and uncertainty in the writings of the ancient

ancient naturaliſts. If to diſcover the name of an animal or a vegetable, we were obliged to ſearch over and compare a whole ſeries of deſcriptions, the fatigue would be intolerable. No perſon objects to a dictionary, becauſe the words follow alphabetically, and not according to their gradation of meaning. If by means of arrangement, how artificial ſoever, we can, from a few obvious characters, refer an object ſucceſſively to its order, its genus, and its ſpecies, we ſhall trace out its name, and thence learn its properties with eaſe and pleaſure: and even though contiguous diviſions always run into one another, the number of poſſible trials is at any rate much limited, and the labour of the inveſtigation abridged. To complete Natural Hiſtory requires the union of Buffon and Linnæus. With this view therefore, I have given an abſtract of the Linnæan claſſification of Birds from the laſt edition of his *Syſtema Naturæ*, by Gmelin, in 1788; and to each article of the work I have joined his names and ſynonyms, with a tranſlation of the ſpecific character. Moſt of the other additions I owe to Mr. Latham, and particularly to Mr. Pennant: I ſhould be ungrateful did I not acknowledge the aſſiſtance which I have received from the various and entertaining works of this amiable naturaliſt.

But notwithſtanding the pains which I have beſtowed to render this work complete, I deliver it to the public with the anxiety that naturally accom-

accompanies a firſt attempt. It is compoſed at an early period of life, and in the retirement of the country. Some inaccuracies and blemiſhes may have eluded my attention. Motives of prudence will determine me to withhold my name: for hard is the lot of the tranſlator; his humble toil is commonly beheld with diſdain; and the utmoſt he can expect is to eſcape cenſure. This ſupercilious treatment has already occaſioned pernicious effects. Men of ſuperior talents have generally deſerted a path that leads neither to honour nor emolument. Hence the purity of our language has been violated by an inundation of vicious and foreign idioms, and tranſlations have often been written, that really merit contempt. Should the public alſo frown upon *my* labours, I ſhall at leaſt conſole myſelf with the hope, that the experience of maturer years may correct my errors. But if it will deign to receive this work with indulgence (this is all that I intreat), the approbation will animate my exertions and heighten my enjoyments.

CON-

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ON THE

NATURE

OF

BIRDS.

THE word Nature has in all languages two very different acceptations. It denotes either that Being, to the operation of which we uſually aſcribe the chain of effects that conſtitute the phænomena of the univerſe; or it ſignifies the aggregate of the qualities implanted in man, or in the various quadrupeds, and birds, &c. It is *active* nature that, ſtamping their peculiar characters, thus forms *paſſive* nature; whence are derived the *inſtincts* of animals, their *habits*, and their *faculties*. We have in a former work treated of the nature of Man and the Quadrupeds; that of Birds now demands our attention: and though the ſubject is, in many reſpects, more obſcure, we ſhall endeavour to ſelect the diſcriminating features, and to place them in the proper point of view.

ON

Perception, or rather the faculty of feeling; inſtinct, which reſults from it; and talent, which conſiſts in the habitual exerciſe of the natural powers; are widely diſtinguiſhed in different beings. Theſe intimate qualities depend upon organization in general, and eſpecially upon that of the ſenſes: they are not only proportioned to the degree of the perfection of theſe; they have alſo a relation to the order of ſuperiority that is eſtabliſhed. In man, for inſtance, the ſenſe of touch is more exquiſite than in all other animals; in theſe, on the contrary, ſmell is more perfect than in man: for touch is the foundation of knowledge, and ſmell is only the ſource of perception. But, as few perſons diſtinguiſh nicely the ſhades that diſcriminate between ideas and ſenſations, knowledge and perception, reaſon and inſtinct, we ſhall ſet aſide what are termed *ratiocination*, *diſcernment*, and *judgment*; and we ſhall only conſider the different combinations of ſimple perception, and endeavour to inveſtigate the cauſes of that diverſity of inſtinct, which, though infinitely varied in the immenſe number of ſpecies, ſeems more conſtant, more uniform, and more regular, and leſs ſubject to caprice and error, than reaſon in the ſingle ſpecies which boaſts the poſſeſſion of it.

In comparing the ſenſes, which are the primary powers that readily excite and impel the inſtinct in all animals, we find that of ſight to be

be more extended, more acute, more accurate, and more diſtinct in the birds in general, than in the quadrupeds: I ſay in general, for there are ſome birds, ſuch as the owls, that have leſs clear viſion than the quadrupeds; but this, in fact, reſults from the exceſſive ſenſibility of the eye, which, though it cannot ſupport the glare of noon-day, diſtinguiſhes nicely objects in the glimmering of the evening. In all birds the organ of ſight is furniſhed with two membranes, an external and internal, additional to thoſe which occur in man: the former *, or external membrane, is placed in the large angle of the eye, and is a ſecond and more tranſparent eye-lid, whoſe motions too are directed at pleaſure, and whoſe uſe is to clear and poliſh the cornea: it ſerves alſo to temper the exceſs of light, and conſequently to adjuſt the quantity admitted, to the extreme delicacy of the organ: the † other is

* This internal eye-lid *(membrana nictitans)* occurs in ſeveral quadrupeds; but in moſt of them it is not moveable as in birds.

† "In the eyes of a turkey cock, the optic nerve, which was ſituated very near the ſide, after perforating the ſclerotic and choroid coats, ſpread into a round ſpace, from the circumference of which a number of black filaments were ſent off to form by their union a membrane which is found *in all birds*."—"In the eyes of the oſtrich, the optic nerve, after perforating the ſclerotic and choroid coats, was dilated into a ſort of funnel of a ſimilar ſubſtance: this funnel is not commonly round in birds, where we have almoſt always found the extremity of the optic nerve flattened and compreſſed within the eye: from this funnel a folded membrane took its origin, forming a ſort of purſe that drew to a point. This purſe, which was ſix lines broad at the baſe, where it grew out of the op-

is ſituated at the bottom of the eye, and appears to be an expanſion of the optic nerve, which, receiving more immediately the impreſſions of the rays, muſt be much more ſenſible than in other animals; and hence the ſight is in birds vaſtly more perfect, and embraces a wider range. A ſparrow-hawk, while he hovers in the air, eſpies a lark ſitting on a clod, though at twenty times the diſtance at which a man or dog could perceive it. A kite which ſoars to ſo amazing a height as totally to vaniſh from our ſight, yet diſtinguiſhes the ſmall lizards, field-mice, birds, &c. and from this lofty ſtation he ſelects what he deſtines to be victims of his rapine. But this prodigious extent of viſion is accompanied likewiſe with an equal accuracy and clearneſs; for the eye can dilate or contract, can be ſhaded or uncovered, depreſſed or made protuberant, and thus it will readily aſſume the preciſe form ſuited to the quantity of light and the diſtance of the object.

Sight has a reference alſo to motion and ſpace; and, if birds trace the moſt rapid courſe, we might expect them to poſſeſs in a ſuperior degree that ſenſe which is proper to guide and direct their flight. If Nature, while ſhe endowed them with great agility and vaſt muſcular

tic nerve, was black, and ſeemed imbued, and quite penetrated by that colour, which on the choroid is only ſpread, and may be rubbed off with the fingers." *Memoires pour ſervir à l'Hiſt. des Anim.*

ſtrength,

ſtrength, had formed them ſhort-ſighted, their latent powers would have availed them nothing; and the danger of daſhing againſt every intervening obſtacle would have repreſſed or extinguiſhed their ardour. Indeed, we may conſider the celerity with which an animal moves, as the juſt indication of the perfection of its viſion. A bird, for inſtance, that ſhoots ſwiftly through the air, muſt undoubtedly ſee better than one which ſlowly deſcribes a waving tract. Among the quadrupeds too, the *ſloths* have their eyes enveloped, and their ſight is limited.

The idea of motion, and all the other ideas which accompany or flow from it, ſuch as thoſe of relative velocities, of the extent of country, of the proportional height of eminences, and of the various inequalities that prevail on the ſurface, are, therefore, more preciſe in birds, and occupy a larger ſhare of their conceptions than in quadrupeds. Nature would ſeem to have pointed out this ſuperiority of viſion by the more conſpicuous and more elaborate ſtructure of its organ; for in birds the eye is larger in proportion to the bulk of the head than in quadrupeds *;

* "The ball of the eye in a female eagle was, at its greateſt width, an inch and half in diameter; that of the male was three lines leſs." *Mem. pour ſervir à l'Hiſt. des Animaux.*

The ball of the ibis' eye was ſix lines in diameter.

The eye of the ſtork four times larger. *Idem.*

The ball of the caſſowary's eye was four times larger than its *cornea*, being an inch and half in diameter, though the cornea was only three lines. *Idem.*

it is alſo more delicate and more finely faſhioned, and the impreſſions which it receives muſt excite more vivid ideas.

Another cauſe of the difference between the inſtincts of birds and of quadrupeds, is the nature of the element in which they live. The birds know better than man, perhaps, all the degrees of reſiſtance of the air, its temperature at different heights, its relative denſity, &c. They foreſee more than us, they indicate better than our barometers or thermometers, the changes which happen in that voluble fluid. Often have they ſtruggled againſt the violence of the wind, and oftener have they borrowed its aid. The eagle, ſoaring above the clouds*, can quickly eſcape from the ſcene of the ſtorm to the region of calm, and there enjoy a ſerene ſky and a bright ſun, while the other animals below are involved in darkneſs, and expoſed to all the fury of the tempeſt. In twenty-four hours it can change its climate, and ſailing over the different countries, it will form a picture which exceeds the powers of our imagination. Our bird's-eye views, of which the accurate execution is ſo tedious and ſo difficult, give very imperfect

* It can be proved that the eagle, and other birds of lofty flight, can riſe perpendicularly above the clouds; for they frequently mount entirely out of our ſight. But in day-light an object ceaſes to be viſible when it exceeds 3,436 times its diameter; if, therefore, the extent of the bird be five feet, it will be ſeen at the height of 17,180 feet, or above three miles.

notions

notions of the relative inequality of the ſurfaces which they repreſent. But birds can chuſe the proper ſtations, can ſucceſſively traverſe the field in all directions, and with one glance comprehend the whole. The quadruped knows only the ſpot where it feeds; its valley, its mountain, or its plain: it has no conception of the expanſe of ſurface, no idea of immenſe diſtances, and no deſire to puſh forward its excurſions. Hence remote journies and migrations are as rare among the quadrupeds as they are frequent among the birds. It is this deſire, founded on their acquaintance with foreign countries, on the conſciouſneſs of their expeditious courſe, and on their foreſight of the changes that will happen in the atmoſphere and of the revolution of ſeaſons, that prompt them to retire together, and by common conſent. When their food begins to grow ſcarce, when, as the cold or the heat incommodes them, they reſolve on their retreat, the parents collect their young, and the different families aſſemble and communicate their views to the unexperienced; and the whole body, ſtrengthened by their numbers, and actuated by the ſame common motives, wing their journey to ſome diſtant land.

This propenſity to migration, which recurs every ſpring and autumn, is a ſort of violent longing, which, even in captive birds, burſts out in ſymptoms of reſtleſs and uneaſy ſenſations. We ſhall, at the article of the Quail, give a detail

of obſervations on this ſubject; from which it will appear, that this propenſity is one of their moſt powerful inſtincts; and that, though they uſually remain tranquil in their priſon, they make every exertion at thoſe periods to regain their liberty, and join their companions.—But the circumſtances which attend migration vary in different birds; and, before we enter into the full diſcuſſion which that ſubject merits, we ſhall purſue our inveſtigation of the cauſes that form and modify their inſtincts.

Man is eminently ſuperior to all the animals in the ſenſe of touch, perhaps too in that of taſte; but he is inferior to moſt of them in the other three ſenſes. When we compare the animals with each other, we ſoon perceive that ſmell in general is more acute among the quadrupeds than among the birds: for though we ſpeak of the ſcent of the crow, of the vulture, &c. it undoubtedly obtains in a much lower degree; and we might be convinced of this by merely examining the ſtructure of the organ. In moſt of the winged tribes, the external noſtrils are wanting, and the effluvia, which excite the ſenſation, have acceſs only to the duct leading from the palate *: and even in thoſe where the organ is diſcloſed, the nerves, which take their origin from it, are far from being ſo numerous, ſo large, or ſo expanded, as in the quadruped.

* Hiſt. de l'Acad. des Sciences, tome i. p. 430.

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We may therefore regard touch in man, ſmell in the quadruped, ſight in the bird, as the three moſt perfect ſenſes, and which influence the general character.

Next to ſight, the moſt perfect of the ſenſes in birds is hearing, which is even ſuperior to that of the quadrupeds. We perceive with what facility they retain and repeat tones, ſucceſſions of notes, and even diſcourſe; we delight to liſten to their unwearied ſongs, to the inceſſant warbling of their happy loves. Their ear and throat are more ductile and more powerful than in other animals. Moſt of the quadrupeds are habitually ſilent; and their voice, which is ſeldom heard, is almoſt always harſh and diſagreeable. In birds it is ſweet, pleaſant, and melodious. There are ſome ſpecies, indeed, in which the notes ſeem unſupportable, eſpecially if compared with thoſe of others; but theſe are few in number, and comprehend the large kinds, which Nature, beſtowing on them hoarſe loud cries, ſuited to their bulk, would incline to treat like quadrupeds. A peacock, which is not the hundredth part of the ſize of an ox, may be heard farther; the nightingale could fill a wider ſpace with its muſic than the human voice: this prodigious extent, and the great powers of their organs of ſound, depend entirely on the ſtructure; but that their ſong ſhould be continued and ſupported, reſults ſolely from their internal

internal emotions. Theſe two circumſtances ought to be conſidered ſeparately.

The pectoral muſcles are more fleſhy and much ſtronger in birds than in man or the quadrupeds, and their action is immenſely greater. Their wings are broad and light, compoſed of thin hollow bones, and connected by powerful tendons. The eaſe with which birds fly, the celerity of their courſe, and even their power of directing it upwards or downwards, depend on the proportion of the impelling ſurface to the maſs of the body. When they are ponderous, and the wings and tail at the ſame time ſhort, like the buſtard, the caſſowary, or the oſtrich, they can hardly riſe from the ground.

The windpipe is wider and ſtronger in birds than in quadrupeds, and uſually terminates below in a large cavity that augments the ſound. The lungs too have greater extent, and ſend off many appendices which form air-bags, that at once aſſiſt the motion, by rendering the body ſpecifically lighter, and give additional force to the voice. A little production of the cartilage of the *trachea* in the howling baboon *, which is a quadruped of a middle ſize only, and of the ordinary ſtructure, has enabled it to ſcream almoſt without intermiſſion, and ſo loud, as to be heard at more than a league's diſtance: but in birds,

* Simia—Beelzebut. *Linn.*

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the formation of the thorax, of the lungs, and of all the organs connected with these, seems expressly calculated to give force and duration to their utterance; and the effect must be proportionally greater *.

There is another circumstance which evinces that birds have a prodigious power of voice: the cries of many species are uttered in the higher regions of the atmosphere, where the rarity of the medium must consequently weaken the effect. That the rarefaction of the air diminishes sounds is well ascertained from pneumatical experiments; and I can add, from my own observation, that, even in the open air, a sensible difference in this respect may be perceived. I have often spent whole days in the forests, where I was obliged to listen closely to

* In most water-fowls, which have a very strong voice, the *trachea* reverberates the sound; for the *glottis* is placed below it, and not above it, as in man. *Coll. Acad. Part. Fr. tome* i. 496.—The same is the case in the cock. *Hist. de l'Acad. tome* ii. 7. In birds, especially ducks and other water-fowls, the organs of voice consist of an *internal larynx* placed where the *trachea arteria* parts; of two membranous pipes which communicate below with the two first branches of the *trachea*; of many semilunar membranes, disposed one above another in the principal branches of the fleshy lungs, and which, occupying only one half of their cavity, allow a free exit to the air; of other membranes placed in various positions, both in the middle and in the lower part of the *trachea*; and lastly, of a membrane, of more or less solidity, situated almost transversely between the two branches of the *lunula*, which terminates a cavity that constantly occurs in the upper and internal part of the breast. *Mem. de l'Acad. des Sciences, anné* 1753.

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the diſtant cries of the dogs, or ſhouts of the hunters; I uniformly found that the ſame noiſes were much leſs audible during the heat of the day, between ten and four o'clock, than in the evening, and particularly in the night, whoſe ſtillneſs would make hardly any alteration, ſince in theſe ſequeſtered ſcenes there is nothing to diſturb the harmony but the ſlight buzz of inſects and the chirping of ſome birds. I have obſerved a ſimilar difference between the froſty days in winter and the heats of ſummer. This can be imputed only to the variation in the denſity of the air. Indeed, the difference ſeems to be ſo great, that I have often been unable to diſtinguiſh in mid-day, at the diſtance of ſix hundred paces, the ſame voice which I could, at ſix o'clock in the morning or evening, hear at that of twelve or fifteen hundred paces.—A bird may riſe at leaſt to the height of ſeventeen thouſand feet, for it is there juſt viſible. A flock of ſeveral hundred ſtorks, geeſe, or ducks, muſt mount ſtill higher, ſince, notwithſtanding the ſpace which they occupy, they ſoar almoſt out of ſight. If the cry of birds therefore may be heard from an altitude of above a league, we may reckon it at leaſt four times as powerful as that of men or quadrupeds, which is not audible at more than half a league's diſtance on the ſurface. But this eſtimation is even too low: for, beſide the diſſipation of force to be attributed to the cauſe already aſſigned, the

ſound

ſound is propagated in the higher regions as from a centre in all directions, and only a part of it reaches the ground; but, when made at the ſurface, the aerial waves are reflected as they roll along, and the lateral and vertical effect is augmented. It is hence that a perſon on the top of a tower hears one better at the bottom, than the perſon below hears from above.

Sweetneſs of voice and melody of ſong are qualities which in birds are partly natural, partly acquired. Their great facility in catching and repeating ſounds enables them not only to borrow from each other, but often to copy the inflexions and tones of the human voice, and of our muſical inſtruments. Is it not ſingular, that in all populous and civilized countries, moſt of the birds chant delightful airs, while, in the extenſive deſerts of Africa and America, inhabited by roving ſavages, the winged tribes utter only harſh and diſcordant cries, and but a few ſpecies have any claim to melody? Muſt this difference be imputed to the difference of climate alone? The extremes of cold and heat operate indeed great changes on the nature of animals, and often form externally permanent characters and vivid colours. The quadrupeds of which the garb is variegated, ſpotted, or ſtriped, ſuch as the panthers, the leopards, the zebras, and the civets, are all natives of the hotteſt climates. All the birds of the tropical regions ſparkle with the moſt glowing tints,

while thoſe of the temperate countries are ſtained with lighter and ſofter ſhades. Of the three hundred ſpecies that may be reckoned belonging to our climates, the peacock, the common cock, the golden oriole, the king-fiſher, and the goldfinch, only can be celebrated for the variety of their colours; but Nature would ſeem to have exhauſted all the rich hues of the univerſe on the plumage of the birds of America, of Africa, and of India. Theſe quadrupeds, clothed in the moſt ſplendid robes, theſe birds attired in the richeſt plumage, utter at the ſame time hoarſe, grating, or even terrible cries. Climate has no doubt a principal ſhare in this phænomenon; but does not the influence of man contribute alſo to the effect? In all the domeſticated animals, the colours never heighten, but grow ſofter and fainter: many examples occur among the quadrupeds; and cocks and pigeons are ſtill more variegated than dogs or horſes. The real alteration which the human powers have produced on nature, exceeds our fondeſt imagination: the whole face of the globe is changed; the milder animals are tamed and ſubdued, and the more ferocious are repreſſed and extirpated. They imitate our manners; they adopt our ſentiments; and, under our tuition, their faculties expand. In the ſtate of nature, the dog has the ſame qualities and diſpoſitions, though in an inferior degree, with the tiger, the leopard, or the lion; for the character

character of the carnivorous tribe reſults ſolely from the acuteneſs of their ſmell and taſte: but education has mollified his original ferocity, improved his ſagacity, and rendered him the companion and aſſociate of man.

Our influence is ſmaller on the birds than on the quadrupeds, becauſe their nature is more different from our own, and becauſe they are leſs ſubmiſſive and leſs ſuſceptible of attachment. Thoſe we call *domeſtic*, are only priſoners, which, but for propagating, are uſeleſs during their lives; they are victims, multiplied without trouble, and ſacrificed without regret. As their inſtincts are totally unrelated to our own, we find it impoſſible to inſtil our ſentiments; and their education is merely mechanical. A bird, whoſe ear is delicate, and whoſe voice is flexible, liſtens to diſcourſe, and ſoon learns to repeat the words, but without feeling their force. Some have indeed been taught to hunt and fetch game; ſome have been trained to fondle their inſtructor: but theſe ſentiments are infinitely below what we communicate ſo readily to the quadrupeds. What compariſon between the attachment of a dog, and the familiarity of a canary bird; between the underſtanding of an elephant, and the ſagacity of an oſtrich?

The natural tones of birds, ſetting aſide thoſe derived from education, expreſs the various modifications of paſſion; they change even according to the different times or circumſtances.

ſtances. The females are much more ſilent than the males; they have cries of pain or fear, murmurs of inquietude or ſolicitude, eſpecially for their young; but ſong is generally withheld from them. In the male it ſprings from ſweet emotion, from tender deſire; the canary in his cage, the greenfinch in the fields, the oriole in the woods, chant their loves with a ſonorous voice, and their mates reply in feeble notes of conſent. The nightingale, when he firſt arrives in the ſpring, is ſilent; he begins in faultering unfrequent airs: it is not until the dam ſits on her eggs, that he pours out the warm melody of his heart: then he relieves and ſoothes her tedious incubation; then he redoubles his careſſes, and warbles more pathetically his amorous tale. And what proves that love is among birds the real ſource of their muſic is, that, after the breeding ſeaſon is over, it either ceaſes entirely, or loſes its ſweetneſs.

This melody, which is each year renewed, and which laſts only two or three months during the ſeaſon of love, and changes into harſh low notes on the ſubſidence of that paſſion, indicates a phyſical relation between the organs of generation and thoſe of voice, which is moſt conſpicuous in birds. It is well known that the articulation is never confirmed in the human ſpecies before the age of puberty; and that the bellowing of quadrupeds becomes tremendous when they are actuated by their fiery luſts. The repletion

pletion of the ſpermatic veſſels irritates the parts of generation, and by ſympathy affects the throat. Hence the growth of the beard, the forming of the voice, and the extenſion of the genital organ in the male; the ſwell of the breaſts, and the expanſion of the glandulous bodies in the female. In birds the changes are more conſiderable; not only are theſe parts ſtimulated or altered; after being in appearance entirely deſtroyed, they are even renovated by the operation of the ſame cauſes. The teſticles, which in man and moſt of the quadrupeds remain nearly the ſame at all times, contract and waſte almoſt entirely away in birds after the breeding ſeaſon is over, and on its return they expand to a ſize that even appears diſproportioned. It would be curious to diſcover if there is not ſome new production in the organs of the voice, correſponding to this ſwell in the parts of generation.

Man ſeems even to have given a direction to love, that appetite which Nature has the moſt deeply implanted in the animal frame. The domeſtic quadrupeds and birds are almoſt conſtantly in ſeaſon, while thoſe which roam in perfect freedom are only at certain ſtated times ſtimulated by the ardour of paſſion. The cock, the pigeon, and the duck, have, equally with the horſe, the ram, and the dog, undergone this important change of conſtitution.

But the birds excel the other animals in the powers of generation, and in their aptitude for

motion. Many ſpecies ſcarcely reſt a ſingle moment, and the rapacious tribes purſue their prey without halting or turning aſide, while the quadrupeds need to be frequently recruited.—To give ſome idea of the rapidity and continuance of the flight of birds, let us compare it with the celerity of the fleeteſt land-animals. The ſtag, the rein-deer, and the elk, can travel forty leagues a-day; the rein-deer can draw its ſledge at the rate of thirty leagues for ſeveral days. The camel can perform a journey of three hundred leagues in eight days. The choiceſt race-horſe can run a league in ſix or ſeven minutes; but he ſoon ſlackens his career, and could not long ſupport ſuch an exertion. I have elſewhere mentioned the inſtance of an Engliſhman who rode ſixty-two leagues in eleven hours and thirty-two minutes, changing horſes twenty-one times: ſo that the beſt horſe could not travel more than four leagues in an hour, or thirty leagues in a day. But the motion of birds is vaſtly ſwifter: an eagle, whoſe diameter exceeds four feet, riſes out of ſight in leſs than three minutes, and therefore muſt fly more than 3,500 yards in one minute, or twenty leagues in an hour. At this rate, a bird would eaſily perform a journey of two hundred leagues in a day, ſince ten hours would be ſufficient, which would allow frequent halts, and the whole night for repoſe. Our ſwallows, and other migratory birds, might therefore reach the equator in ſeven or eight

days. Adanſon ſaw on the coaſt of Senegal ſwallows that had arrived on the ninth of October; that is, eight or nine days after their departure from Europe *. Pietro della Valle ſays, that in Perſia † the meſſenger-pigeon travels as far in a ſingle day as a man can go a-foot in ſix days. It is a well-known ſtory, that a falcon of Henry II. which flew after a little buſtard at Fontainbleau, was caught next morning at Malta, and recognized by the ring which it wore ‡. A Canary falcon, ſent to the duke of Lerma, returned in ſixteen hours from Andaluſia to the iſland of Teneriffe, a diſtance of two hundred and fifty leagues. Sir Hans Sloane || aſſures us, that at Barbadoes the gulls make excurſions in flocks to the diſtance of more than two hundred miles, and return the ſame day. Taking all theſe facts together, I think we may conclude that a bird of vigorous wing could every day paſs through four or five times more ſpace than the fleeteſt quadruped.

Every thing conſpires to the rapidity of a bird's motion: firſt, the feathers are very light, have a broad ſurface, and their ſhafts are hollow: ſecondly, the wings are convex above and concave below; they are firm and wide ſpread, and the muſcles which act upon them are power-

* Voyage au Senegal.

† Voyage de Pietro della Valle.

‡ Obſervations of Sir Edmund Scoty, in Purchaſs's Collection.

|| A Voyage to the Weſt Iſlands, with their Natural Hiſtory, by Sir Hans Sloane.

ful: thirdly, the body is proportionally light, for the flat bones are thinner than in the quadrupeds, and hollow bones have much larger cavities. "The ſkeleton of the pelican," ſay the anatomiſts of the Academy, "is extremely light, not weighing more than twenty-three ounces, though it is of conſiderable bulk." This quality diminiſhes the ſpecific gravity of birds.

Another conſequence which ſeems to reſult from the texture of the bones, is the longevity of birds. In man and the quadrupeds, the period of life ſeems to be in general regulated by the time required to attain the full growth: but in birds it follows different proportions; their progreſs is rapid to maturity; ſome run as ſoon as they quit the ſhell, and fly ſhortly afterwards: a cock can copulate when only four months old, and yet does not acquire his full ſize in leſs than a year. Land animals generally live ſix or ſeven times as long as they take to reach the age of puberty; but in birds the proportion is ten times greater, for I have ſeen linnets fourteen or fifteen years old, cocks twenty, and parrots above thirty, and they would probably go beyond theſe limits *. This difference

* A perſon of veracity aſſured me, that a parrot layed at about forty years of age, without commerce with any male, at leaſt of its own kind.—It is ſaid, that a ſwan has lived three hundred years; a gooſe eighty; and a pelican as many. The eagle and crow are famous for longevity. ENCYCLOPEDIE, article *Oiſeau*.—Aldrovandus relates, that a pigeon lived twenty-two years, and ceaſed to breed only the laſt ſix years.—Willoughby ſays, that linnets live fourteen years, and goldfinches twenty-three, &c.

I ſhould

I ſhould attribute to the ſoft porous quality of the bones; for the general oſſification and rigidity of the ſyſtem to which animals perpetually tend, determine the boundary of life; that will therefore be prolonged, if the parts want ſolidity and conſiſtence. It is thus that women arrive oftener at old age than men; that birds live longer than quadrupeds, and that fiſhes live longer than birds.

But a more particular inquiry will evince that uniformity of plan which prevails through nature. The birds, as well as the quadrupeds, are carnivorous, or granivorous. In the former claſs, the ſtomach and inteſtines are proportionally ſmall; but thoſe of the latter have a craw additional, correſponding to the falſe belly in ruminating animals, and the capacity of the ventricle compenſates for the unſubſtantial quality of their deſtined food. The granivorous birds have alſo two *cæca*, and a very ſtrong muſcular ſtomach, which ſerves to triturate the hard ſubſtances which they ſwallow.

The diſpoſitions and habits of animals depend greatly on their original appetites. We may therefore compare the eagle, noble and generous, to the lion; the vulture, cruel and inſatiable, to the tiger; the kite, the buzzard, the crow, which only prowl among carrion and garbage, to the hyænas, the wolves, and jackals. The falcons, the ſparrow-hawks, the gos-hawks, and the other birds trained for ſport, are analo-

gous to the dogs, the foxes, the ounces, and the lynxes; the owls, which prey in the night, repreſent the cats; the herons, and the cormorants, which live upon fiſh, correſpond to the beavers and otters; and, in their mode of ſubſiſtence, the woodpeckers reſemble the ant-eaters. The common cock, the peacock, the turkey, and all the birds furniſhed with a craw, bear a relation to the ox, the ſheep, the goat, and other ruminating animals. With regard to the article of food, birds have a more ample latitude than quadrupeds; fleſh, fiſh, the amphibious tribes, reptiles, inſects, fruits, grain, ſeeds, roots, herbs; in a word, whatever lives or vegetates. Nor are they very nice in their choice, but often catch indifferently at what they can moſt eaſily obtain. The ſenſe of taſte is much leſs acute in birds than in quadrupeds; for, if we except ſuch as are carnivorous, their tongue and palate are in general hard, and almoſt cartilaginous. Smell can alone direct them, and this they poſſeſs in an inferior degree. The greater number ſwallow without taſting, and maſtication, which conſtitutes the chief pleaſure in eating, is entirely wanting to them. Hence, on all theſe accounts, they are ſo little attentive to the ſelection of their food, that they often poiſon themſelves *.

* Parſley, coffee, bitter almonds, &c. prove poiſonous to hens, parrots, and many other birds, which eat theſe ſubſtances with avidity when preſented with other food.

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The attempt is impoſſible therefore to diſtinguiſh the winged tribes according to the nature of their aliments. The more conſtant and determined appetites of quadrupeds might countenance ſuch a diviſion *; but in birds, where the taſte is ſo irregular, it would be entirely nugatory. We ſee hens, turkies, and other fowls which are called granivorous, eat worms, inſects, and bits of fleſh with greater avidity than grain. The nightingale, which lives on inſects, may be fed with minced meat; the owls, which are naturally carnivorous, often when other prey fails, catch night-flies in the dark; nor is their hooked bill, as thoſe who deal in final cauſes maintain, any certain proof that they have a decided propenſity for fleſh, ſince parrots and many other birds which ſeem to prefer grain

* Friſch, whoſe work is in many reſpects valuable, divides all birds into twelve claſſes. The firſt contains *the ſmall birds, with a thick ſhort bill, which ſplit ſeeds into two equal portions*; the ſecond includes *the ſmall birds with a ſlender bill, that eat flies and worms*; the third comprehends *the black-birds and thruſhes*; the fourth, *the woodpeckers, cuckoos, hoopoes, and parrots*; the fifth, *the jays and magpies*; the ſixth, *the rooks and crows*; the ſeventh, *the diurnal birds of prey*; the eighth, *the nocturnal birds of prey*; the ninth, *the wild and tame poultry*; the tenth, *the wild and tame pigeons*; the eleventh, *the geeſe, ducks, and other ſwimming animals*; the twelfth, *the birds which are fond of water and wet places*.——We eaſily ſee that the inſtinct of opening ſeeds in two equal portions ought not to be adopted as a character, ſince in this ſame claſs there are birds, ſuch as the titmice, that do not ſplit them, but pierce and tear them; and that, beſides, all the birds of this firſt claſs, which are ſuppoſed to ſubſiſt ſolely on ſeeds, feed likewiſe on inſects and worms: it was better, therefore, as Linnæus has done, to join them into one claſs.

have alſo a hooked bill. The more voracious kinds devour fiſh, toads, and reptiles, when they cannot obtain fleſh. Almoſt all the birds which appear to feed upon grain, were reared by their parents with inſects. The arrangement derived from the nature of the food is thus totally deſtitute of foundation. No one character is ſufficient: it requires the combination of many.

Since birds cannot chew, and the mandibles which repreſent the jaws are unprovided with teeth, the grains are ſwallowed whole, or only half-bruiſed *. But the powerful action of the ſtomach ſerves them inſtead of maſtication; and the ſmall pebbles, which aſſiſt in trituration, may be conceived to perform the office of teeth †.

As

* In parrots, and many other birds, the upper mandible is moveable as well as the under; whereas in quadrupeds the lower jaw only is moveable.

† In no animals is the mode of digeſtion ſo favourable as in birds to the ſyſtem of trituration. Their gizzard has the proper force and direction of fibres; and the voracious kinds, which greedily ſnatch the ſeeds on which they feed without ſtopping to ſeparate the hard cruſt which envelopes them, ſwallow at the ſame time little ſtones, by means of which the violent contraction of the coats of the ſtomach bruiſes and detaches the ſhell. This is a real trituration, which in other animals is performed by the teeth. But, after the ſeeds are decorticated, the action of a ſolvent may take place; and there is a ſort of bag from which a large quantity of a whitiſh liquor flows into the ſtomach, for in a recently dead bird it may be preſſed out. Helvetius ſubjoins, that ſometimes in the

As Nature has inveſted the quadrupeds which haunt marſhes, or inhabit cold countries, with a double fur, and with thick cloſe hair; ſo has the clothed the aquatic birds, and thoſe which live in the northern tracts, with abundance of plumage, and a fine down; inſomuch that, from this circumſtance alone, we may judge of their proper element, or of their natal region. In all climates, the birds which dwell in the water are nearly equally feathered, and have under the tail large glands, containing an oily ſubſtance for anointing their plumes, which, together with their thickneſs, prevents the moiſture from inſinuating. Theſe glands are much ſmaller in the land-birds, or totally wanting.

Birds that are almoſt naked, ſuch as the oſtrich, the caſſowary, and the dodo, occur only in the warm climates. All thoſe which inhabit cold countries are well clothed with plumage. And for the ſame reaſon, thoſe which ſoar into the higher regions of the atmoſphere require a thick covering, that they may encounter the

the *œſophagus* of the cormorant, fiſh are found half digeſted. *Hiſt. de l'Academie des Sciences, année* 1719.

Seventy *doubles* were found in the ſtomach of an oſtrich, moſt of them worn three-fourths, and furrowed by their rubbing againſt each other, and againſt the pebbles, but not at all affected by ſolution, for ſome which happened to be crooked were quite poliſhed on the convex ſide, while the concave ſide was not altered. *Memoires pour ſervir a l'Hiſtoire des Animaux.*

A Spaniſh gold piſtole ſwallowed by a duck had loſt ſixteen grains of its weight when voided. *Collect. Acad. Partie Etrangere.*

chilneſs

chilneſs which there prevails. If we pluck the feathers from the breaſt of an eagle, he will no longer riſe out of our ſight.

The greater number of birds caſt their feathers every year, and appear to ſuffer much more from it than the quadrupeds do from a ſimilar change. The beſt fed hen ceaſes at that time to lay. The organic molecules ſeem then to be entirely ſpent on the growth of the new feathers. The ſeaſon of moulting is generally the end of ſummer or autumn *, and their feathers are not completely reſtored till the beginning of ſpring, when the mildneſs of the air, and the ſuperabundance of nutrition, urge them to love. Then all the plants ſhoot up, the inſects awaken from their long ſlumber, and the earth ſwarms with animation. This ample proviſion foſters their ardent paſſions, and offers abundant ſubſiſtence to the fruits of their embrace.

We might deem it as eſſential to the bird to fly, as it is to the fiſh to ſwim, or to the quadruped to walk; yet in all theſe tribes there are exceptions to the general property. Among

* Domeſtic fowls generally moult in autumn; partridges and pheaſants, before the end of ſummer; and ſuch as are kept in parks, caſt their feathers immediately after their firſt hatch. In the country, the pheaſants and partridges undergo that change about the cloſe of July, only the females which have had young are ſome days later. Wild ducks moult rather before that time.——I owe theſe remarks to M. Le Roy, king's ranger at Verſailles.

quadru-

quadrupeds the rufous, red and common bats, can only fly; the ſeals, the ſea-horſes, and ſea-cows, can only ſwim; and the beavers and otters walk with more difficulty than ſwim: and, laſtly, there are others, ſuch as the ſloth, which can hardly drag along their bodies. In the ſame manner, we find among birds the oſtrich, the caſſowary, the dodo, the touyou, &c. which are incapable of flying, and are obliged to walk; others, ſuch as the penguins, the ſea-parrots, &c. which fly and ſwim, but never walk; and others, in fine, which, like the bird of paradiſe, can neither walk nor ſwim, but are perpetually on the wing. It appears, however, that water is, on the whole, more ſuited to the nature of birds than to that of quadrupeds: for, if we except a few ſpecies, all the land animals ſhun that element, and never ſwim, unleſs they are urged by their fears or wants. Of the birds, on the contrary, a large tribe conſtantly dwell on the waters, and never go on ſhore, but for particular purpoſes, ſuch as to depoſite their eggs, &c. And what proves this poſition, there are only three or four quadrupeds which have their toes connected by webs; whereas we may reckon above three hundred birds which are furniſhed with ſuch membranes. The lightneſs of their feathers and of their bones, and even the ſhape of their body, contribute greatly to the facility with which they ſwim, and their feet ſerve as oars to impel them along. Accordingly,

ingly, certain birds diſcover an early propenſity to the water; the ducklings ſail on the ſurface of the pool long before they can uſe their wings.

In quadrupeds, eſpecially thoſe which have their feet terminated by hard hoofs or nails, the palate ſeems to be the principal ſeat of touch as well as of taſte. Birds, on the other hand, oftener feel bodies with their toes; but the inſide of theſe is covered with a callous ſkin, and their tongue and mouth are almoſt cartilaginous: ſo that, on both accounts, their ſenſations muſt be blunt.

Such then is the order of the ſenſes which Nature has eſtabliſhed in the different beings. In man, touch is the firſt, or the moſt perfect; taſte the ſecond; ſight the third; hearing the fourth; and ſmell the fifth and laſt. In quadrupeds, ſmell is the firſt; taſte the ſecond, or rather theſe two ſenſes form only one; ſight the third; hearing the fourth; and touch the laſt. In birds, ſight is the firſt; hearing the ſecond; touch the third; and taſte and ſmell the laſt. The predominating ſenſations will alſo follow the ſame order: man will be moſt affected by touch; the quadrupeds by ſmell; and the birds by ſight. Theſe will likewiſe give a caſt to the general character, ſince certain motives of action will acquire peculiar force, and gain the aſcendency. Thus, man will be more thoughtful and profound, as the ſenſe of touch would appear

appear to be more calm and intimate; the quadrupeds will have more vehement appetites; and the birds will have emotions as extenſive and volatile as is the glance of ſight.

But there is a ſixth ſenſe, which, though it intermits, ſeems, while it acts, to control all the others, and excites the moſt powerful emotions, and awakens the moſt ardent affections:—it is love. In quadrupeds, that appetite produces violent effects; they burn with maddening deſire; they ſeek the female with ſavage ardor; and they embrace with furious extaſy. In birds it is a ſofter, more tender, and more endearing paſſion; and, if we except thoſe which are degraded by domeſtication, and a few other ſpecies, conjugal fidelity and parental affection are among them alike conſpicuous. The pair unite their labours in preparing for the accommodation of their expected progeny; and, during the time of incubation, their participation of the ſame cares and ſolicitudes continually augments their mutual attachment. After the eggs are hatched, a new ſource of pleaſure opens to them, which further ſtrengthens the ties of affection; and the tender charge of rearing the infant brood requires the joint attention of both parents. The warmth of love is thus ſucceeded by calm and ſteady attachment, which by degrees extends, without ſuffering any diminution, to the riſing branches of the family.

The

The quadrupeds are impelled by unbridled luſt, which never ſoftens into generous friendſhip. The male abandons the female as ſoon as the cravings of his appetite are cloyed; he retires to recruit his ſtrength, or haſtens to the embraces of another. The education of the young is devolved entirely on the female; and as they grow ſlowly, and require her immediate protection, the maternal tenderneſs is ripened into a ſtrong and durable attachment. In many ſpecies the mother leads two or three litters at one time. There are ſome quadrupeds, however, in which the male and female aſſociate together; ſuch are the wolves and foxes: and the fallow-deer have been regarded as the patterns of conjugal fidelity. There are alſo ſome ſpecies of birds where the cock ſeparates after ſatisfying his paſſion;—but ſuch inſtances are rare, and do not affect the general law of nature.

That the pairing of birds is founded on the need of their mutual labours to the ſupport of the young, appears clearly from the caſe of the domeſtic fowls. The male ranges at will among a ſeraglio of ſubmiſſive concubines; the ſeaſon of love has hardly any bounds; the hatches are frequent and tedious; the eggs are often removed; and the female never ſeeks to breed, until her prolific powers are deadened, and almoſt exhauſted: beſides, they beſtow little care in

in making their r..., they are abundantly ſupplied with proviſions, and by the aſſiſtance of man they are freed from all thoſe toils and hardſhips and ſolicitudes which other birds feel and ſhare in common. They contract the vices of luxury and opulence, *indolence* and *debauchery*.

The eaſy comfortable condition of the domeſtic fowls, and their generous food, mightily invigorate the powers of generation. A cock can tread twelve or fifteen hens, and each embrace continues its influence for three weeks; ſo that he may each day be the father of three hundred chickens. A good hen lays a hundred eggs between the ſpring and autumn; but in the ſavage ſtate ſhe has only eighteen or twenty, and that only during a ſingle ſeaſon. The other birds indeed repeat oftener their incubations, but they lay fewer eggs. The pigeons, the turtles, &c. have only two; the great birds of prey three or four; and moſt other birds five or ſix.

Want, anxiety, and hard labour, check in all animals the multiplication of the ſpecies. This is particularly the caſe with birds; they breed in proportion as they are well fed, and afforded eaſe and comfort. In the ſtate of nature, they ſeem even to huſband their prolific powers, and to limit the number of their progeny to the penury of their circumſtances. A bird lays five eggs, perhaps, and devotes her whole attention during

during the reſt of the ſeaſon to the incubation and education of the young. But if the neſt be deſtroyed, ſhe ſoon builds another, and lays three or four eggs more; and if this be again plundered, ſhe will conſtruct a third, and lay ſtill two or three eggs. During the firſt hatch, therefore, thoſe internal emotions of love which occaſion the growth and excluſion of the eggs, are repreſſed. She thus ſacrifices duty to paſſion, amorous deſire to parental attachment. But when her fond hopes are diſappointed, ſhe ſoon ceaſes to grieve; the procreative faculties, which were ſuſpended, not extinguiſhed, again reſume their influence, and enable her in ſome meaſure to repair her loſs.

As love is a purer paſſion in birds than in quadrupeds, its mode of gratification is alſo ſimpler. Coition is performed among them only in one way*, while many other animals embrace in various poſtures †: only in ſome ſpecies, as in that of the common cock, the female ſquats; and in others, ſuch as the ſparrows, ſhe continues to ſtand erect. In all of them the act is tranſitory, and is ſtill ſhorter in thoſe which in their ordinary attitude wait the approach of the male, than in thoſe which cower to receive him ‡. The external form,

* Ariſtotle, lib. v. 8.

† The ſhe-camel ſquats; the ſhe-elephant turns upon her back; the hedgehogs couple face to face, and either in an erect or reclined poſture; and monkies in every manner.

‡ Ariſtotle, lib. v. 2.

and

and the internal ſtructure of the organs of generation are very different from what obtains in quadrupeds. The ſize, the poſition, the number, the action and motion of theſe parts even vary much in the ſeveral ſpecies of birds *. In ſome there appears to be a real penetration; in others, a vigorous compreſſion, or ſlight touch. But we ſhall conſider the details in the courſe of the work.

To concentrate the different principles eſtabliſhed in this diſcourſe: that the *ſenſorium* of birds contains chiefly the images derived from the ſenſe of ſight; and theſe, though ſuperficial, are very extenſive, and, for the moſt part, relate to motion, to diſtance, and to ſpace: that comprehending a whole province within the limits of their horizon, they may be ſaid to carry in their brain a geographical chart of the places which they view: that their facility in traverſing wide territories is one of the cauſes which prompt their frequent excurſions and migrations: that their ear being delicate, they are alarmed by ſudden noiſes, but may be ſoothed by ſoft ſounds, and allured by calls: that their organs of voice being exceedingly power-

* Moſt birds have two yards, or a forked one projecting from the *anus*. In ſome ſpecies the male organ is exceedingly large; in others hardly viſible. The female orifice is not ſituated, as in the quadrupeds, below the *anus*, but above it; and there is no matrix, &c.

ful and ſoft, they naturally vent their feelings in loud reſounding ſtrains: that, as they have more ſigns and inflexions, they can, better than the quadrupeds, expreſs their meaning: that eaſily receiving, and long retaining the impreſſions of ſounds, the organ delights in repeating them; but that its imitations are entirely mechanical, and have no relation to their conceptions: that their ſenſe of touch being obtuſe, they have only imperfect ideas of bodies: that they receive their information of diſtant objects from ſight, not from ſmell: that as their taſte is indiſcriminating, they are more prone to voracity than ſenſuality: that, from the nature of the element which they inhabit, they are independent of man, and retain their natural habits; that, for this reaſon, moſt of them are attached to the ſociety of their fellows, and eagerly convene: that, being obliged to unite their exertions in building a neſt, and in providing for their offſpring, the pair contract an affection for each other, which continues to grow, and then extends to the tender brood: that this friendſhip reſtrains the violent paſſions, and even tempers love, and begets chaſtity, and purity of manners, and gentleneſs of diſpoſition: that, though their power of fruition is greater than in other animals, they confine its exerciſe within moderate bounds, and ever

ever ſubject their pleaſures to their duties: and, finally, that theſe ſprightly beings, which Nature would ſeem to have produced in her gay moments, may be regarded as a ſerious and decent race, which exhibit excellent leſſons and laudable examples of morality.

EXPLANATION *of ſome* TECHNICAL TERMS *that occur in this Work.*

Mandible, one of the pieces of which the bill conſiſts.
Vent, the part under the tail.
Cere, the naked ſkin which covers the baſe of the bill in ſome birds; ſo called from its reſembling wax.
Bridle, the plumules on the front immediately over the bill.
Strap, the ſpace running from the bill to the eye.
Orbit, the naked ſkin encircling the eye.
Quill, a great feather of the wings or tail.
Rufous, tawny-red.
Falvous, tawny-yellow.
Cinereous, aſh-coloured, rather deep.
Ferruginous, dark, ruſty-coloured.

The Meaſures and Weights uſed throughout are French. The Pariſian foot is to the Engliſh as 1 is to 1.066: hence the following table is conſtructed.

Inches.		Inches.		Inches.	
French.	Engliſh.	French.	Engliſh.	French.	Engliſh.
4 -	4.26	13 -	13.85	22 -	23.46
5 -	5.33	14 -	14.92	23 -	24.52
6 -	6.40	15 -	15.99	24 -	25.58
7 -	7.46	16 -	17.05	25 -	26.65
8 -	8.53	17 -	18.12	26 -	27.72
9 -	9.59	18 -	19.18	27 -	28.78
10 -	10.66	19 -	20.25	28 -	29.85
11 -	11.73	20 -	21.32	29 -	30.91
12 -	12.79	21 -	22.38	30 -	31.98

The Pariſian pound is divided into ſixteen ounces, each ounce into eight gros, and each gros into ſeventy-two grains. The pound is equal to 7561 Engliſh grains Troy; whence the French ounce amounts to 472½ grains Troy; the gros to 59 grains, and a French grain is about four-fifths of an Engliſh grain. A French ounce is therefore only one ſixty-fourth greater than an ounce Troy, which makes it unneceſſary to give a table of reduction.

BIRDS of PREY.

ALL the birds almoſt might merit this appellation, ſince by far the greater number ſearch for inſects, worms, and other ſmall creatures; but I ſhall confine it to thoſe which ſubſiſt on fleſh, and wage perpetual war againſt the other winged tribes. On compariſon, I find that they are much leſs numerous than the ravenous quadrupeds. The family of the lions, the tigers, the panthers, the ounces, the leopards, the hunting cats, the jaguars, the couguars, the Mexican cats, the margays, and the wild or domeſtic cats: that of the dogs, the jackals, the wolves, the foxes, and the arctic foxes: the more numerous tribes of the hyænas, the civets, the oriental civets, the dwarf civets, the Madagaſcar pole-cats: the ſtill more numerous tribes of the pole-cats, the martens, the fitchews, the ſkunks, the ferrets, Guinea weaſels, the ermines, the common weaſels, the ſables, the ichneumons, the Braſilian weaſels, the gluttons, the pekans, the minks, the ſoufliks; the opoſſums, the mar-mice, the Mexican opoſſums, the woolly jerboas, the Surinam opoſſums: that of the rufous, red, and common bats: To theſe we may add the whole family of the rats,

which being too weak to attack other animals, prey on each other:—all theſe rapacious quadupeds exceed greatly in number the eagles, the vultures, the ſparrow hawks, the falcons, the jerfalcons, the kites, the buzzards, the keſtrels, the merlins, the owls, the ſhrikes, and the crows, which are prone to rapine: and many of theſe, ſuch as the kites, the buzzards, and the crows, prefer carrion to freſh prey. In ſhort, there is only a fifteenth part of the birds carnivorous, while of the quadrupeds more than a third come under that deſignation.

The birds of prey being much fewer and weaker than the rapacious quadrupeds, commit leſs depredation on land; but, as if tyranny never relinquiſhed its claims, whole tribes inhabit the ocean and ſubſiſt by their ravages. Of the quadrupeds, ſcarce any, except the beavers, the otters, the ſeals, and the ſea-horſes, live on fiſh; yet multitudes of birds derive their ſupport entirely from that ſource. We have therefore to divide the birds of prey into two claſſes, correſponding to the elements of air and water, which are the ſcenes of their havocks. Thoſe which war againſt the finny race are provided with a ſtraight pointed bill; their nails are ſlender, their toes webbed, and their legs bent backwards. Thoſe, on the contrary, which riot in carnage at land, and which are properly the ſubject of this article, are furniſhed with talons and with a ſhort curved bill; their toes are parted, and without

without membranes; their legs are ſtrong, and generally covered by the feathers of the thighs; their nails large and hooked.

We ſhall for the preſent ſet aſide alſo the nocturnal birds of prey, and adopt what appears to be the moſt natural order in treating of thoſe which commit their ravages during the day. We ſhall begin with the eagles, the vultures, the kites, and the buzzards; then the hawks, the jerfalcons, and falcons; and cloſe with the merlins and the ſhrikes. Many of theſe include a great number of ſpecies and of permanent families produced by the influence of climate; and with each we ſhall range the kindred foreign birds. In this way we ſhall delineate not only thoſe of Europe, but alſo all thoſe which inhabit remote countries, whether deſcribed by authors, or procured by our correſpondence.

There is a ſingular property common to all the birds of prey, but of which it would be difficult to aſſign the cauſe *; that the female is ſtronger, and a third larger than the male; exactly the reverſe to what obtains in the quadrupeds, and even in other birds. In fiſhes and inſects, the female is indeed larger than the male: this is

* The final cauſe at leaſt is obvious. In the rapacious birds, the care of the brood is entruſted ſolely to the female; and Nature has wiſely endowed her with greater force to enable her to provide both for her own wants and thoſe of her family.—Nothing but the too frequent and often puerile applications of ſuch views of Nature could ever bring them into diſrepute. T.

owing to the immenſe number of eggs which ſwell their bodies. But this reaſon will not apply in the caſe of birds.—In thoſe which are the moſt prolific, ſuch as the domeſtic poultry, the ducks, turkies, pheaſants, partridges, and quails, the hen lays eighteen or twenty eggs, and yet is ſmaller than the cock.

All the birds of rapine fly in a lofty courſe, their wings and legs are ſtrong, their ſight exceedingly quick, their head thick, their tongue fleſhy, their ſtomach ſingle and membranous, their inteſtines narrower and ſhorter than in other birds; they prefer the ſolitary tracts, the deſert mountains, and they commonly breed in crags, or on the talleſt trees. Many ſpecies inhabit both continents, and ſome appear to have no fixed abode. The general characters are, that their bill is hooked, and that they have four toes on each foot, all of which are diſtinctly parted. But the eagle's head is covered with feathers, which diſtinguiſhes it from the vulture, whoſe head is naked, and only ſhaded with ſlight down; And both theſe are diſcriminated from the hawks, the buzzards, the kites, and the falcons, by an obvious property; for their bill continues ſtraight to a certain diſtance before it bends, but in the latter it aſſumes its curve at the origin.

The birds of prey are not ſo prolific as other birds. It is ſtrange that Linnæus ſhould aſſert that they lay about four eggs: for there are ſome, ſuch as the

the common and ſea-eagles, which have only two; and others, as the keſtrel and merlin, that have ſeven. In birds, as in quadrupeds, the general law obtains, that the multiplication is inverſely as the bulk. There are ſome apparent exceptions to this rule, pigeons for inſtance; but the ſmallneſs of the hatch will be found to be compenſated by its frequent repetition.

The birds of prey are more obdurate and ferocious than other birds. They are not only intractable, but have the unnatural propenſity to drive their tender brood from the neſt. Accuſtomed continually to ſcenes of carnage, and torn by angry paſſions, they contract a ſtern cruel diſpoſition; all the ſofter feelings are eradicated, and maternal attachment itſelf is blunted. She regards not the imploring calls of her helpleſs young, but when ſtraitened for food, ſhe rudely thruſts them upon the world, or murders them in a tranſport of fury.

This obdurate ſelfiſh temper produces in the birds of prey, as well as the carnivorous quadrupeds, another effect. They never aſſociate together, but, like robbers, lead a roving ſolitary life. Luſt indeed draws together the male and female, and, as they can mutually aſſiſt in the purſuit of prey, they ſeldom ſeparate even after the breeding ſeaſon. But the family never coaleſces; and the larger kinds, ſuch as the eagle, will not ſuffer their young to be rivals, but expel them from their domain: Whereas, all birds

and

and quadrupeds which ſubſiſt on the fruits of the earth, live in harmony with their offspring, or aſſemble joyouſly in numerous troops.

Before we proceed to the detail of facts, we cannot avoid making ſome remarks on the common methods of claſſification. The nomenclator ſtrives to deſcribe the colours of the plumage with minute preciſion; he enumerates their diſpoſition, all the ſhades, the ſpots, the bars, the ſtripes, the lines; and if a bird does not come under the deſcription which he has thus formed he regards it as a different ſpecies. But all animals change their early garb and complexion; and the tints of the rapacious birds are wonderfully altered by the firſt moulting. A ſecond conſiderable one ſucceeds, and this is often followed by a third; ſo that a perſon who ſhould judge entirely from the colours, would imagine that a bird of ſix months old, another of the ſame kind of eighteen months, and another of two years and a half, belonged to three different ſpecies. But the plumage is alſo affected by various other cauſes; by difference of ſex, of age, and of climate; and therefore the colours can never afford any permanent diſtinction.

The EAGLE.

MANY birds come under this deſignation. Our nomenclators reckon eleven ſpecies natives of Europe, beſides four other, two of which are from Braſil, one from Africa, and another from the Eaſt Indies. Theſe eleven ſpecies are: firſt, the Common Eagle; ſecond, the White-headed Eagle; third, the White Eagle; fourth, the Spotted Eagle; fifth, the White-tailed Eagle; ſixth, the Little White-tailed Eagle; ſeventh, the Golden Eagle; eighth, the Black Eagle; ninth, the Great Sea-eagle; tenth, the Sea-eagle; and, eleventh, the White John. Nothing is eaſier than to ſwell the catalogue of names, and by a profuſion of diviſions and diſtinctions to dazzle the ignorant. We need only to wade through books, ranſack cabinets, and adopt as ſpecific characters all the differences in ſize or colour that may occur. But the true object of the naturaliſt is to weigh and reflect; to endeavour to ſeize the general views, and to concentrate and arrange; and thus, by introducing order and preciſion, to ſmooth the progreſs of the ſtudent.

Omitting

Omitting therefore the four foreign ſpecies of eagles, which we ſhall conſider in the ſequel, and excluding from the liſt the *White John*, which is entirely a different bird, we may reduce the eleven ſpecies to ſix, of which there are three only that properly deſerve the name of Eagles. Theſe three are: firſt, the Golden Eagle; ſecond, the Common Eagle; third, the Rough-footed Eagle. The remaining three are: firſt, the *Pygargue*, or Bald Eagle; ſecond, the Oſprey; third, the Sea-eagle.

The Golden and Rough-footed Eagles form each an independent and unconnected ſpecies; but the Common and Bald Eagles are ſubject to variety. The ſpecies of the Common Eagle includes the brown and the black. The Rough-footed Eagle contains three varieties, viz. the Great White-tailed Eagle, the Little White tailed Eagle, and the White-headed Eagle. I ſhall not add the White Eagle, for I am confident that it owes its colour to the influence of exceſſive cold.

I am induced to adopt this arrangement, both becauſe it was known even in the time of the ancients, that the different kinds of Eagles intermix, and becauſe it nearly coincides with the diviſion marked by Ariſtotle, who appears to have been better acquainted than any of our nomenclators with the real diſcriminating characters. He ſays, that there are ſix ſpecies of Eagles; but among theſe he includes a bird, which he himſelf confeſſes belongs rather to the

the vultures *, and which we muſt therefore ſet aſide. Of the five remaining ones, the three firſt are the ſame with thoſe on which I have fixed; and the fourth and fifth correſpond to the Bald Eagle and the Oſprey. I have ventured, notwithſtanding the authority of that great philoſopher, to ſeparate theſe laſt from the Eagles properly ſo called; in other reſpects, our ideas exactly correſpond.—I ſhall conſider theſe ſubjects fully in the following articles.

* The fourth kind of Eagles, is the *Percnopterus*, ſo called on account of the ſpots on its wings; its head is whitiſh, and its body is larger than the three firſt, but its wings ſhorter, and its tail longer. It has the aſpect of a vulture, which has procured it the epithets of Half-eagle and Mountain Stork. This degenerate bird inhabits the foreſts; it has all the bad qualities of the others, but inherits none of their generous diſpoſitions, for it is beaten and driven to flight by the crow; it is lean, hungry, and gaunt; perpetually complaining, noiſy, and clamorous.

GOLDEN EAGLE.

Le Grand Aigle, Buff.
Falco Chryſaëtos, Linn.
In Spaniſh, *Aquila coronada.*
In Poliſh, *Orzelprzedni.*
In Perſian, *An ſi muger.*
In Syriac, *Napan.*
In Chaldaic, *Niſra.*
In Arabic and Hebrew, *Neſer.*

THE firſt ſpecies is the Golden Eagle, which Belon named, after Athenæus, the *Royal Eagle*, or the *King of Birds*. This is indeed an eagle of a noble family and of an independent race. Hence Ariſtotle denominates it *αετος γνησιος (the Eagle of Birth)*, and our nomenclators have named it the *Golden Eagle*: It is the largeſt of the genus. The female meaſures, from the point of the bill to the extremity of the feet, more than three feet and an half; the wings, when expanded, extend above eight feet, and it weighs ſixteen or eighteen pounds. The male is ſmaller and does not weigh more than twelve. In both, the bill is very ſtrong, and reſembles bluiſh horn; the claws are black and pointed, and the one placed behind, which is the largeſt, is ſometimes five inches long: the eyes are large, but ſunk in a deep

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THE GOLDEN EAGLE

deep cavity, and covered by the projection of the ſuperior part of the orbit: the iris is of a fine bright yellow, and ſparkles with dazzling fire; the vitreous humour is of a topaz colour; the cryſtalline lens, which is dry and ſolid, has the luſtre and brilliancy of the diamond: the œſophagus dilates into a large bag, which is capable of containing a pint: the ſtomach, which is under this, is not near ſo large, but is equally pliant and membranous. The bird is plump, eſpecially in winter. The fat is white, and the fleſh, though hard and fibrous, has not that wild flavour common to birds of prey.

This ſpecies inhabits Greece, the mountains of Bugey in France, thoſe of Sileſia in Germany, the foreſts of Dantzic, the ſummits of the Carpathian mountains, the Pyrenees, and the mountains of Ireland. It is found alſo in Aſia Minor, and in Perſia; for the Perſians had, before the Romans, aſſumed the eagle as the ſtandard of war; and it was this great eagle, this golden eagle, *aquila fulva*, which was conſecrated to Jupiter. The teſtimony of travellers aſcertains its exiſtence in Arabia, in Mauritania, and in many other provinces of Africa and Aſia, as far as Tartary; but it has not been diſcovered in Siberia, or in any other part of the north of Aſia. The ſame remark may be extended to Europe. For this noble bird, which is every where rare, is more frequent in the warm regions than in the temperate countries, and it is

ſeldom obſerved to penetrate farther northwards than the latitude of fifty-five degrees. Nor is it found in North America, though the common eagle is an inhabitant of that part of the globe. The Golden Eagle ſeems to have continued its ancient reſidence; like the other animals, which, being unable to ſupport an intenſe cold, could not migrate into the new world.

There are ſeveral points, both phyſical and moral, in which the eagle reſembles the lion. Both are alike diſtinguiſhed by their ſtrength; and hence the eagle extends his dominion over the birds, as the lion over the quadrupeds. Magnanimity is equally conſpicuous in both; they deſpiſe the ſmall animals, and diſregard their inſults. It is only after a ſeries of provocations, after being teazed with the noiſy and harſh notes of the raven or magpie, that the eagle is determined to puniſh their temerity or their inſolence with death. Beſides, both diſdain the poſſeſſion of that property which is not the fruit of their own induſtry; and they reject with contempt the prey which is not procured by their own exertions. Both are remarkable for their temperance. The eagle ſeldom devours the whole of his game, but, like the lion, leaves the fragments and offals to the other animals. Though famiſhed for want of prey, he diſdains to feed upon carrion. Like the lion alſo, he is ſolitary, the inhabitant of a deſert, over which he reigns ſupreme,

ſupreme, and excludes all the other birds from his ſilent domain. It is more uncommon perhaps to ſee two pairs of eagles in the ſame tract of the mountain, than two families of lions in the ſame part of the foreſt. They ſeparate from each other at ſuch wide intervals, as to afford ample range for ſubſiſtence, and eſteem the value and extent of their kingdom to conſiſt in the abundance of the prey with which it is repleniſhed. The eyes of the eagle have the glare of thoſe of the lion, and are nearly of the ſame colour; the claws of the ſame ſhape, the organs of ſound are equally powerful, and the cry is equally terrible. Deſtined both of them for war and plunder, they are equally fierce, equally bold, and intractable. It is impoſſible to tame them, unleſs they be caught when in their infancy. It requires much patience and art to train a young eagle for the chace; and, after he has attained to age and ſtrength, his caprices and momentary impulſes of paſſion are ſufficient to create ſuſpicions and fears in his maſter. Authors inform us, that the eagle was anciently uſed in the eaſt for falconry, but this practice is now laid aſide. He is too heavy to be carried on the hand without great fatigue, nor is he ever brought to be ſo tame or ſo gentle, as to remove all ſuſpicions of danger. His bill and claws are crooked and formidable: his figure correſponds to his inſtinct. His body is robuſt; his legs and wings ſtrong; his fleſh hard; his

bones firm; his feathers ſtiff; his attitude bold and erect; his movements quick; his flight rapid. He riſes higher in the air than any of the winged race, and hence he was termed by the ancients the *Celeſtial Bird*, and regarded, in their auguries, as the meſſenger of Jupiter. He can diſtinguiſh objects at an immenſe diſtance, but his ſmell is inferior to that of the vulture. By means of his exquiſite ſight, he purſues his prey, and, when he has ſeized it, he checks his flight, and places it upon the ground, to examine its weight, before he carries it off. Though his wings be vigorous, yet his legs being ſtiff, it is with difficulty that he can riſe, eſpecially if he is loaded. He bears away geeſe and cranes with eaſe; he alſo carries off hares, young lambs and kids. When he attacks fawns or calves, he inſtantly gluts himſelf with their blood and fleſh, and afterwards tranſports the mangled carcaſes to his *eyry* or *airy*, (ſo his neſt is called,) which is quite flat, and not hollow like that of other birds. He commonly places it between two rocks, in a dry inacceſſible place. The ſame neſt, it is ſaid, ſerves the eagle for the whole courſe of his life. It is indeed a work laborious enough not to be repeated, and ſolid enough to laſt for a conſiderable time. It is conſtructed nearly like a floor, with ſmall ſticks, five or ſix inches long, ſupported at the extremities, and croſſed with pliant branches, covered with ſeveral layers of ruſhes and heath: the neſt is ſeveral feet

feet broad, and ſo firm, as not only to receive the eagle, the female, and the young, but to bear the weight of a large quantity of proviſions. It is not covered above, but is ſheltered by the projection of the upper part of the rock. In the middle of this ſtructure, the female depoſites her eggs, which ſeldom exceed two or three, and covers them, it is ſaid, for thirty days; but ſome of theſe are commonly addle, and it is ſeldom that three young eagles are found in a ſingle neſt. It is even pretended, that after they have acquired ſome ſtrength, the mother deſtroys the weakeſt or the moſt voracious of her infant brood. Exceſſive ſcarcity of proviſions alone can occaſion this unnatural treatment. The parents, not poſſeſſing a ſufficiency for their own ſupport, endeavour to reduce the members of their family; and when the young are able to fly, and in ſome degree to provide for themſelves, they expel them from their natal abode, and never ſuffer them to return.

The plumage is not of ſo deep a caſt in the young eagles as in thoſe that are full grown. At firſt it is white, then a faint yellow, and afterwards it becomes a bright copper colour. Age, as well as gluttony, diſeaſe, and captivity, contributes to render them white. It is ſaid they live above a century, and that their death is not occaſioned ſo much by extreme age, as by the inability to take food, the bill growing ſo much

curved as to become uſeleſs. However, it has been obſerved, that eagles kept in confinement occaſionally ſharpen their bill, and that its increaſe is, for ſeveral years, imperceptible. It has alſo been remarked, that they feed upon every kind of fleſh, and even upon that of other eagles. When they cannot procure fleſh, they greedily devour bread, ſerpents, lizards, &c. If they be not ſupplied with food, they bite cruelly the cats, dogs, and men that come within their reach. At intervals, they pour forth in an equable ſtrain their ſhrill, loud, and lamentable notes.—The eagle drinks ſeldom, and perhaps not at all when in perfect liberty, becauſe the blood of his victims are ſufficient to quench his thirſt. His excrements are always ſoft, and more watery than thoſe of the other birds, even thoſe which drink frequently.

To this great ſpecies we muſt refer the account in the paſſage of Leo Africanus which we have already quoted, and what travellers in Africa and Aſia relate, who agree in aſſerting that this bird not only carries off kids and young deer, but when taught, that it will even attack foxes and wolves *.

* The Emperor of Thibet has ſeveral tame eagles, which are ſo keen and fierce, that they ſeize hares, bucks, does, and foxes; and there are ſome ſo extremely bold, that they ruſh impetuouſly upon the wolf, and haraſs him ſo much that he can be more eaſily caught. Marco Polo.

(A) Lin-

[A] Linnæus refers the eagles to the genus of the falcon. The ſpecific character of the Golden Eagle is, "that its cere is yellowiſh, its feet woolly and ruſty-coloured, its body of a duſky variegated ferruginous colour, the tail black, with a waved cinereous baſe." He adds, that its feet are clothed with feathers as far as the nails; and that in fine weather it ſoars into the aërial regions, but when there is an impending ſtorm, it hovers near the earth.

The RING-TAIL EAGLE.

L'Aigle Commun, Buff.
Falco Fulvus, Linn.
Aquila, Briſſ. and Klein.
Chryſaëtos, caudâ annulo albo cincta, Will. and Ray.
The Black Eagle, Penn.
In Spaniſh, *Aquila Conocida.*
In German, *Adler, Arn, Aar.*

THIS ſpecies of eagle is not ſo pure or generous as the Golden Eagle. It is compoſed of two varieties; the brown eagle, and the black eagle. Ariſtotle has not diſtinguiſhed them by name; and it appears that he claſſed them under the denomination of Μελαιναετος; that is, black or blackiſh eagle. He properly ſeparates this ſpecies from the preceding, becauſe it differs: 1. in ſize; the Ring-tail Eagle, whether black or brown, being ſmaller than the Golden Eagle: 2. by the colours, which are conſtant in the Golden Eagle, but vary in the Ring-tail Eagle: 3. by its cry, the Golden Eagle uttering often a doleful plaint, while the Ring-tail Eagle, black or brown, ſeldom ſcreams: 4. by its natural diſpoſitions; the Ring-tail Eagle feeding

ing all its young in the neſt, training them, and conducting them to prey after they are partly grown; while the Golden Eagle drives them out of its airy, and abandons them as ſoon as they are able to fly.

It appears eaſy to prove that the Brown and Black Eagle, which I have claſſed together, do not really conſtitute two diſtinct ſpecies. We need only compare them together, even from the characters given by nomenclators with the view of diſtinguiſhing them. They are both nearly of the ſame ſize; they are of the ſame brown colour, only ſometimes of a deeper ſhade; in both, the upper part of the head and neck is tinged with ferruginous, and the baſe of the large feathers marked with white; the legs and feet are alike clothed; in both, the iris is of a hazel colour, the cere of a bright yellow, the bill that of bluiſh horn, the toes yellow, and the talons black: in ſhort, the whole difference conſiſts in the ſhades and diſtribution of the colour of the feathers; which is by no means ſufficient to conſtitute two different ſpecies, eſpecially when the number of the points of reſemblance ſo evidently exceeds that of the difference. I have therefore without ſcruple reduced theſe two ſpecies to one. Ariſtotle has done the ſame thing without mentioning it; but it appears that his tranſlator, Theodore Gaza, perceived it; for he does not render Μελαιναίετος by *Aquila nigra*, but by *Aquila nigricans, pulla fulvia*, which includes the

two varieties of this ſpecies, both of which are blackiſh, but the one of which is more tinged with yellow than the other. Ariſtotle, whoſe accuracy I often admire, gives names and epithets to the animals which he mentions. The epithet of this bird is λαγωφονος, or the *deſtroyer of hares*. In fact, though the other eagles alſo prey upon hares, this ſpecies is a more fatal enemy to thoſe timid animals, which are the conſtant object of their ſearch, and the prey which they prefer. The Latins, after Pliny, termed this eagle *Valeria, quaſi valens viribus*, becauſe of its ſtrength, which appears greater than that of the other eagles in proportion to the ſize.

The Ring-tail Eagle is more numerous and ſpread than the Golden Eagle. The latter is found only in the warm and temperate countries of the ancient continent; the former prefers the cold tracts, and inhabitants of both continents. It occurs in France, Savoy, Switzerland, Germany, Poland, Scotland, and even in North America, at Hudſon's Bay*.

* Ellis tells us, that about Hudſon's Bay there are many other birds remarkable for their ſhape and ſtrength: ſuch as the White-tailed Eagle, which is nearly of the ſize of a turkey-cock; its crown flattened, its neck ſhort, its breaſt large, its thighs ſtrong, and its wings very long and broad in proportion to its body; they are blackiſh behind, but alſo of a lighter colour on the ſides; the breaſt is marked with white, the wing feathers are black; the tail when cloſed is white above and below, except the tips of the feathers, which are black or brown; the thighs are covered with blackiſh brown feathers, through which in ſome places the white down

down appears; the legs are covered to the feet with a brown, or ſomewhat reddiſh plumage; each foot has four thick ſtrong toes, three before and one behind; they are covered with yellow ſcales, and furniſhed with nails that are exceedingly ſtrong and ſharp, and of a ſhining black.

[A] The ſpecific character given by Linnæus of the Ring-tail Eagle *(Falco fulvus)* is, "That its cere is yellow; its feet woolly and dull ruſt-coloured; and its tail marked with a white ring." The brown ſort was ſtated in the 10th edition of the *Syſtema Naturæ* as a diſtinct ſpecies, by the name of *Falco Canadenſis*, and deſcribed as "having a yellow cere, its feet woolly, its body duſky-coloured, its tail white, and tipt with brown." In the 12th and ſubſequent editions, however, it is conſidered as merely a variety. It builds its neſt in the lofty cliffs. The ſpaces between its eyes and its ears are naked. Its breaſt is ſprinkled with triangular ſpots.

We may remark, that both Linnæus and Pennant conceive, that Marco Polo, in his Deſcription of the Uſages of the Tartars, alludes to this ſpecies, and not to the Golden Eagle, as Buffon ſuppoſes.

The Black Eagle, termed by Friſch, *Schwartz-braune Adler* (Black-brown Eagle), which Buffon ranges with the Ring-tail Eagle, is reckoned a different ſpecies by Linnæus, under the name of *Falco Melanætus*.—"Its cere is yellowiſh, its feet partly woolly, its body black-ferruginous, with yellow ſtreaks." It is two feet ten inches long. The half of the wing feathers next their origin is white with blackiſh ſpots, the remaining half blackiſh. The egg is a dirty white, mottled with ruſty-clouded ſpots.

The ROUGH-FOOTED EAGLE.

Le Petit Aigle. Buff.
Falco Nævius. Linn.
In German, *Stein Adler, Gauſe aar.*

THE third ſpecies is the Rough-footed Eagle, which Ariſtotle deſcribes as a plaintive bird, with a ſpotted plumage, and ſmaller and weaker than the other eagles. It meaſures, from the point of the bill to the extremity of the feet, only two feet and a half; and its wings are proportionally ſmaller, ſcarcely extending four feet. It has been termed *Aquila planga* [B], *Aquila clanga*, the *Plaintive Eagle*, the *Screaming Eagle*. Theſe names are very applicable; for it continually utters moans, or lamentable cries. It was ſurnamed *Anataria*, becauſe it commonly preys upon ducks; *Morphna*, becauſe its plumage, which is of a dirty-brown, is marked upon the thighs and wings with ſeveral white ſpots, and its neck is encircled with a large whitiſh

[B] Syſtematic writers have conſidered the *Crying* or *Spotted* Eagle as a different ſpecies from the Rough-footed. It is the *Falco Maculatus* of Linnæus. The character: "Its cere and its woolly feet are yellowiſh, its body duſky-ferruginous below; the axillary feathers and the coverts of the wings are tipt with oval white ſpots." It is two feet long.

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ring. It is more tractable * than any of the eagles, and not ſo bold or intrepid. It is termed by the Arabians *Zemiech* †, to diſtinguiſh it from the Golden Eagle, which is called *Zumach*. The crane is its largeſt prey, and it generally confines its ravages ‡ to the ducks, the ſmall birds and rats. This ſpecies, though not plentiful in any particular ſpot, is ſcattered over the extent of the ancient continent §; but it does not appear that it is found in America: for I preſume that the bird called the Oronooko Eagle, which bears ſome reſemblance to this in the variety of its plumage, is yet of a different ſpecies.—If this Rough-footed Eagle, which is much more docile, and more eaſily tamed than the other two, and which is alſo lighter on the hand, and leſs dangerous to its maſter, were equally intrepid, it would have been employed for the purpoſes of falconry. But it is as cowardly as it is plaintive and noiſy. A well-trained ſparrow-hawk can attack it, and come off victorious.

* This *Aquila clanga* lived familiarly with me for more than three years. It would, when I allowed it, ſit upon the table ſeveral hours at my left-hand, obſerving the motion of the right in writing, and ſometimes ſtroked my cap with its head. If I tickled it under the chin, it uttered a ſhrill ſound. It lived peaceably with the other birds. It diſliked every food but freſh beef. KLEIN.

† The *Zumach* preys upon hares, foxes, and deer; the *Zemiech* catches cranes, and the ſmaller birds. *Falconnerie, par* GUIL. TARDIF.

‡ Schwenckfeld.

§ It is found near Dantzic; and alſo, though rarely, in the mountains of Sileſia. SCHWENCKFELD.

torious. Beſides, our authors on the ſubject of falconry inform us, that, in France at leaſt, the two firſt ſpecies of eagles only have been trained for ſport *. To ſucceed in teaching them, they muſt be taken when young, for an adult eagle is not only ſtubborn, but quite intractable. They muſt be fed upon the fleſh of the game which they are intended to purſue. Their education requires more watchful attention than that of the other birds employed in falconry.—We ſhall give a ſketch of that art when we treat of the falcon. I ſhall only mention here ſome peculiarities which have been obſerved with regard to eagles, whether in the ſtate of liberty, or in that of domeſtication.

The female, which in the eagle as in all other birds of prey is larger than the male, and alſo ſeems in the ſtate of nature to be bolder, more intrepid, and more ſubtle, appears to loſe its courage and ſagacity when reduced to captivity. The males are preferred for ſport; and it is obſerved that, in the ſpring, when the ſeaſon of love returns, they endeavour to eſcape to their females. And if we employ them dur-

* To this ſpecies we may refer the following paſſage: "There are eagles alſo in the mountains near Tauris, in Perſia; I have ſeen one ſold for five halfpence by the peaſants. People of rank chaſe this bird with the ſparrow-hawk. This ſport is ſomewhat curious and extraordinary. The ſparrow-hawk flies high above the eagle, darts rapidly upon him, fixes its talons in his ſides, and continuing to fly beats his head with its wings. It ſometimes happens that both fall together.

ing

ing this critical period, we run a riſk of loſing them, unleſs we cool the ardour of their paſſion by adminiſtering violent purges. It has alſo been remarked, that when an eagle, after leaving the hand, ſkims along the ground, and afterwards riſes perpendicularly, he meditates an eſcape. He muſt inſtantly be ſolicited to return, by throwing him food. But if flies wheeling above his keeper, and does not ſtretch to a diſtance, it is a ſign of his attachment and conſtancy. It has been obſerved likewiſe, that an eagle trained for ſport, loſing its original inſtinct, often attacks and devours the gos-hawk and other ſmall birds of prey; but in the ſtate of nature, it only contends with them, or plunders them, as rivals.

In the ſtate of nature, the eagle never engages in a ſolitary chace but when the female is confined to her eggs or her young. This is the ſeaſon when the return of the birds affords plenty of prey, and he can with eaſe provide for the ſuſtenance of himſelf and that of his mate. At other times, they unite their exertions, and they are always ſeen cloſe together, or at a ſhort diſtance from each other. The inhabitants of the mountains, who have an opportunity of obſerving their manœuvres, pretend, that the one beats the buſhes, while the other, perched on a tree or a rock, watches the eſcape of the prey. Often they ſoar beyond the reach of human ſight, and notwithſtanding the

immenſe diſtance, their cry is ſtill heard, and then reſembles the barking of a ſmall dog. Though a voracious bird, the eagle, eſpecially in captivity and deprived of exerciſe, can endure for a long time the want of ſuſtenance. I have been informed by a man of veracity, that a common eagle caught in a fox-trap, paſſed five whole weeks without the leaſt food, and that it did not appear ſenſibly weakened till towards the laſt week, after which they killed it, to put an end to its lingering pain.

Though the eagles in general prefer deſert and mountainous tracts, they are ſeldom found in narrow peninſulas, or in iſlands of ſmall extent. They inhabit the interior country in both continents, becauſe iſlands are commonly not ſo well ſtocked with animals. The antients remarked that eagles were never ſeen in the iſle of Rhodes, and conſidered it as a prodigy, that when the Emperor Tiberius viſited that famous ſpot, an eagle perched upon the houſe where he lodged. Eagles make excurſions into iſlands, but do not fix their reſidence there, or lay their eggs; and when travellers ſpeak of eagles, whoſe neſts they find on the ſea-ſhore or in iſlands, they mean not thoſe which we have mentioned, but the Oſpreys, commonly termed *Sea-eagles*, which are birds of a different inſtinct, and which feed on fiſh rather than on game.

I ought

I ought here to relate the anatomical obſervations that have been made on the internal ſtructure of eagles; and I cannot draw my information from a better ſource than the Memoirs of thoſe Gentlemen of the Academy of Sciences who diſſected two eagles, a male and a female, of the common ſpecies. After remarking, that the eyes were deep ſunk; that they were of a pink colour, with the luſtre of the topaz; that the cornea was arched with a great convexity; that the ligament was of a bright red, the eyelids large, and ſufficient to cover the whole eye; they obſerved, with reſpect to the interior ſtructure, that the tongue was cartilaginous at the tip, and fleſhy in the middle; that the *larynx* was blunt and not pointed, as in moſt of the birds whoſe bill is ſtraight; that the *æſophagus* was very large, and widened below to form the ſtomach; that this ſtomach was not a hard gizzard, but pliant and membranous like the *æſophagus*, and only thicker at the bottom; that theſe two cavities, both the lower part of the *æſophagus* and that of the ſtomach, were very broad, and ſuited to the voracity of the bird; that the inteſtines were ſmall, as in all other animals which feed on fleſh; that there was no *cæcum* in the male, but in the female there were two pretty broad ones, more than two inches long; that the liver was large and of a bright red, the left lobe larger than the right; that the gall-bladder was large, and about the ſize of a cheſnut; that the

kidnies were ſmall, compared with the other parts, and with thoſe of other birds; that the male-teſticles were only of the ſize of a pea, and of a yellow fleſh colour; and that the *ovarium* and *vagina* of the female were like thoſe of other birds.

[A] Linnæus reckons the Rough-footed Eagle as a variety of the *Falco Gallinarius*, becauſe it is ſmaller, and its wings more variegated. The character of the ſpecies is "That the cere and feet are yellow; the upper part of the body duſky; the lower, tawny with dun oval ſpots; the tail darkiſh and ringed."

The ERNE.

THE Erne tribe appears to me to conſiſt of three varieties: the *Great Erne* *, the *Small Erne* †, and the *White-headed Erne* ‡. The two firſt are diſtinguiſhed only by their ſize, and the laſt ſcarcely differs at all from the firſt; and the ſole diſcrimination is, that it has more white on its head and neck. Ariſtotle ‖ deſcribes the ſpecies alone, and omits to mention the varieties: he ſpeaks indeed only of the Great Erne, for he gives it the epithet of *Hinularia*, which denotes that this bird preys upon fawn, that is, young ſtags, deer, and roebucks; a character that cannot belong to the Small Erne, which is too weak to attack ſuch large animals.

* *Le Grand Pygargue*, Buff. *Falco Albicilla*, Linn. *Pygargus*, *Albicilla Hirundinaria*, Bel. & Geſn. *Braunfahler Adler*, Friſch. *White-tailed Eagle*, Will. *Cinereous Eagle*, Penn. & Lath.

† *Le Petit Pygargue*, Buff. *Falco Albicaudus*, Linn. *Aquila Albicilla minor*, Briſſ. *Erne*, Geſn. *Fawn-killing Eagle*, Charl. *Leſſer White-tailed Eagle*, Lath.

‡ *Le Pygargue à tête blanche*, Buff. *Falco Leucocephalus*, Linn. *White-headed Eagle*, Penn. *Bald Eagle*, Cat. & Lath.

‖ "There are ſeveral kinds of Eagles. One is called *Pygargus*, from its white tail. It haunts the plains, groves, and towns. By ſome it is called *Hinnularia*. It alſo reſorts to the mountains and foreſts. —The other kinds ſeldom appear in the plains, or in the groves." ARIST. *Hiſt. An.*

The difference between the Ernes and the Eagles conſiſts, Firſt, In the want of plumage on the legs; the Eagles are clothed as far as the pounces; but the Ernes are naked in all the lower part. Secondly, In the colour of the bill; in the Eagles, it is of a bluiſh black; in the Ernes, it is yellow or white. Thirdly, In the whiteneſs of the tail; which circumſtance has given riſe to the name which the Erne has ſometimes received of *White-tailed Eagle*. In fact, the tail is white both in the upper and under ſide through its whole length. They differ from the Eagles alſo in their inſtincts and habits. They fix their reſidence not in deſerts, or lofty mountains; they haunt the plains or woods that are near the habitations of men. The Erne appears to ſhew, like the Common Eagle, a preference to cold countries. It is found in all the northern kingdoms of Europe. The Great Erne is of the ſame ſize and the ſame ſtrength, if not more vigorous, than the Common Eagle: it is at leaſt more bloody and ferocious, and leſs attached to its young; for it feeds them but a ſhort time, drives them from its neſt before they can procure ſuſtenance; and it is pretended that, without the aſſiſtance of the Oſprey, which generally takes them under its protection, they would periſh. It has commonly two or three young, and builds its neſt upon large trees. A deſcription of one of theſe neſts occurs in Willoughby, and in ſeveral other authors who have

copied it. It is an airy, or floor quite flat, like that of the Great Eagle, ſheltered above by the foliage of trees, and formed with ſmall ſticks and branches, which are covered with ſeveral alternate layers of broom, and other plants. That unnatural diſpoſition which inſtigates thoſe birds to expel their young before their feeble ſtrength is able to procure an eaſy ſubſiſtence, and which is common to the Erne, the Golden Eagle, and the Spotted Rough-footed Eagle, proves that theſe three ſpecies are more voracious, and more inactive in the purſuit of their prey, than the Ring-tail Eagle, which watches and feeds* generouſly its infant brood, and afterwards trains them, teaches them to hunt, and does not deſert them till their dexterity and vigour are ſufficient for their ſupport. The young alſo inherit the inſtinct of their parents. The Eaglets of the common kind are gentle and peaceful; but thoſe of the Golden Eagle and the Erne, as ſoon as they have acquired ſome ſtature, are continually fighting and contending about their food, and their place in the neſt: ſo that the father and mother, to terminate the quarrel, often deſtroy a mutinous ſubject. The Golden Eagle and the Erne generally point

* "The offifraga feeds carefully both its own young and thoſe of the eagle; for when it ejects them from the neſt, this bird receives them, and breeds them. The eagle turns them out before they can procure food, or fly. In this forlorn ſtate, the offifraga liſtens to their complaints, and kindly takes them under its protection." ARIST. *Hiſt. An.*

their attacks upon large animals; they often ſatiate themſelves upon the ſpot, being unable to tranſport their prey: hence their depredations are leſs frequent, and, not preſerving carrion in their neſt, they are often reduced duced to want. On the other hand, the Common Eagle, which catches every day hares and birds, ſupplies more eaſily and more plentifully the neceſſary ſubſiſtence to its young. It has alſo been remarked, eſpecially with regard to the Ernes, which chuſe their haunt near ſettled ſpots, that they ſearch for their prey only during a few hours in the middle of the day, and devote the morning, the evening, and the night to ſleep; whereas the Common Eagle *(Aquila Valeria)* is more adventurous, more active, and more indefatigable [A].

[A] The three birds claſſed together in this article are conſidered by Linnæus, and other ſyſtematic writers, as diſtinct ſpecies:—

Firſt, The Great Erne, or Cinereous Eagle; *Falco albicilla*, LINN. Its character is, "That its cere and feet are yellow; the tail-feathers white, and the intermediate ones tipt with black." It is of the ſize of a peacock, being two feet nine inches long; its head and neck are of a pale aſh-colour; the iris and bill pale yellow, and the bill elongated at its baſe; the ſpace between the eyes and the ears naked, with ſmall ſtraggling briſtles, and of a cærulean hue. The body and wings are cinereous, with dun intermixed; the tail white; the feet woolly below the knees, and of a bright yellow; the claws black.—It inhabits Europe, particularly Scotland and the adjacent iſlands, and preys upon large fiſh.

Second, The Little Erne, or White-tailed Eagle; *Falco albicandus*, LINN.—"Its cere and feet are naked and yellowiſh; the head and neck aſh-coloured, bordering on cheſnut; the body of a dull ferruginous above, and below ferruginous and blackiſh; the tail white." It is of the bulk of a large cock, being two feet two inches long.

The

The bill and iris are inclined to yellow; the tips of the quill-feathers verging on black; the nails black.

Third, The White-headed Erne, or Bald Eagle; *Falco leucocephalus*, LINN.—"The cere yellowiſh; the feet partly woolly; the body duſky; the head and tail white." It is three feet three inches long, and weighs nine pounds. Its head grows white till the ſecond year. It preys on fawns, pigs, lambs, and fiſh. It watches the motion of the Oſprey; and as ſoon as that bird has ſeized a fiſh, it purſues till the prey drops, and, with aſtoniſhing dexterity, catches it before it falls to the ground. It builds in the foreſts of maples, cypreſſes, and pines, generally on the margin of water; and its neſts are ſo much crowded as to reſemble a rookery. They are very large, and have a ſtench from the fragments of carrion. In Bering's Iſland, the Bald Eagle neſtles on the cliffs, and lays two eggs in the beginning of July.

The OSPREY.

Le Balbuzard, Buff.
Falco Haliaëtus, Linn.
The Bald Buzzard, Will.
The Morphnos, or Clanga, Ray and Will.
Fiſhaar. Wires.
In Italian, *Anguiſta Piombina*.
In Poliſh, *Orzelmarſky*.

IF we conſider all the facts relating to this bird *, we muſt conclude that, though it reſembles the eagle more than any other bird of prey, it really conſtitutes a diſtinct genus †. It is much ſmaller, and has neither the port, the

* In the beginning of this article Buffon remarks, that the Oſprey is often called the *Sea-Eagle*; and that in Burgundy it goes by the name of *cran pêcheret*, or *crow-fiſher*; a word which, as well as many more, has been introduced into the dialect of the peaſants of that province by the reſidence of the Engliſh troops.

† The difference between the male and female of the Oſprey is ſtill greater than in the eagles. The one deſcribed by Briſſon, which was undoubtedly a male, was only one foot ſeven inches long, meaſured to the nails, and five feet three inches acroſs the wings; and another which was brought to me, was one foot nine inches in length, and five feet ſeven inches of alar extent. But the female, deſcribed by the anatomiſts of the Academy of Sciences by the name of *haliætus*, was two feet nine inches long, including the tail, which would allow at leaſt two feet for the body; and the alar extent was ſeven feet and a half. This difference is indeed ſo great, that, were it not for other indications, we ſhould doubt if the bird deſcribed was really the *Oſprey* or *Bald-Buzzard*.

figure,

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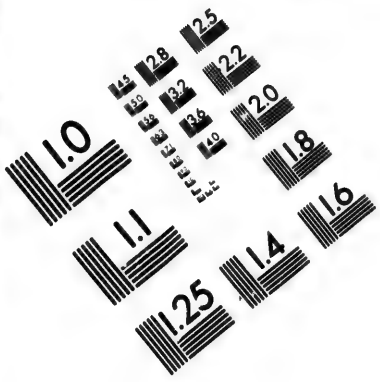
THE OSPREY.

figure, nor the flight of the eagle. Its natural habits are as different as its appetites; for it feeds chiefly on fish, which it catches in the water, and even several feet below the surface *. And that this is its ordinary subsistence appears, because its flesh has a strong fishy flavour. I sometimes observed this bird remain more than an hour perched upon a [illegible] contiguous to a pool, watching the appearance of a large fish, and ready to dart upon it and transport the victim in its talons. Its legs are naked and commonly of a bluish colour; in some individuals, however, the legs and feet are yellowish, the claws large and sharp, the feet and toes so stiff that they cannot be bent; the belly is entirely white, the tail broad, and the head thick and bulky. It differs from the eagles, because its feet and the lower part of its legs are not feathered, and its hind pounce is the shortest;

* Aristotle, however, ranks the Osprey among the eagles:—"The fifth species of eagles is the *Haliætus* or *Sea-Eagle*; its "neck large and thick, its wings curved, its tail broad. It "haunts the shores. When it is unable to carry its prey, it often "plunges it into the water." We must observe that the Greeks classed the rapacious birds into three kinds; the Eagle, the Vulture, and the Hawk. This explains the arrangement which Aristotle has here adopted. But it is somewhat singular, that Ray, who is otherwise an intelligent and accurate writer, should affirm that the *Ossifraga* and the *Haliætus* are the same; since Aristotle distinguishes them, and treats of them in two separate chapters. The only reason which Ray could urge, is the smallness of the Osprey or Bald-Buzzard; but the same reason would also exclude the *Morphnus* from the eagles.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while in the eagles, that is the longeſt of all. It is diſtinguiſhed from the eagle by another circumſtance; for its bill is of a deeper black, and the feet, the toes, and the cere are commonly blue, while thoſe of the eagle are yellow. The toes of the left foot are not connected by ſemi-membranes, as Linnæus aſſerts *; for the toes of both legs are alike parted and devoid of membranes. It is a popular error, that this bird ſwims with the one foot, and catches fiſh with the other; and this has occaſioned the miſtake of Linnæus. Formerly Klein affirmed the ſame thing of the Great Sea-eagle, but he was equally miſtaken; for neither of theſe birds has membranes connecting the toes of the left foot. The common ſource of theſe errors is Albertus Magnus, who writes, that this bird had one foot like that of the ſparrow-hawk, and the other reſembling that of the gooſe; an aſſertion which is not only falſe, but abſurd and inconſiſtent with every analogy. It is indeed aſtoniſhing, that Geſner, Aldrovandus, Klein, and Linnæus, inſtead of rejecting this ſilly fable, have blindly adopted it; and that Aldrovandus tells us coolly, that it is not improbable, ſince he poſitively adds, he knows there are ſeveral water-fowls whoſe feet are half-cloven, half-webbed; an aſſertion as falſe as the firſt.

* Linnæus has omitted this account in the later editions [a].

I am

I am not ſurpriſed that Ariſtotle called this bird ἁλιαέτος, Sea-Eagle; but I am aſtoniſhed that all the naturaliſts, ancient or modern, have copied the name without ſcruple, and I might ſay without reflexion; for this bird frequents the ſea-ſhore not from any decided preference. It oftener haunts inland countries that are contiguous to rivers, lakes, and other freſh waters; and it is even more common in Burgundy, which is the centre of France, than on any of our coaſts. As Greece is a country which has few rivers, pools, or lakes, and which is much interſected and indented by the incroachment or retreat of the ocean, Ariſtotle obſerved that theſe bird-fiſhers ſought their prey on the beach, and for this reaſon he named them *Sea-Eagles*. But had this philoſopher lived in the heart of France, Germany *, Switzerland †, or any other country diſtant from the ſea; and where theſe birds are common, he would probably have termed them *freſh-water-eagles*. Ariſtotle affirms, that this bird has a keen ſight; it compels its young, he ſays, to look at the ſun, and kills thoſe whoſe eyes cannot ſupport the glare. I cannot authenticate this fact, which appears to me rather

* "This bird is exceedingly fat, and is entirely of a fiſhy odor. "It lives not only on the ſea-coaſt, but haunts the rivers and lakes "in Sileſia, and ſits in the trees watching the fiſh." SCHWENCKFELD.

† Geſner ſays, that this bird is found in ſeveral parts of Switzerland, and makes its neſt in certain rocks near waters, or in deep vallies. He adds, that it can be tamed, and employed in falconry.

improbable,

improbable, though it has been related or rather repeated by ſeveral authors; and though it has even been generalized and attributed to all the eagles, which are ſaid to force their brood to look ſteadily at the ſun. This is an obſervation which it would be difficult to make; and Ariſtotle was beſides not much acquainted with the facts relating to the young of this bird. He alleges that they rear only two, and kill that one whoſe eyes cannot bear the dazzling rays of the ſun. But we are certain that they often lay four eggs, and ſeldom three only, and that they raiſe all which are hatched. Inſtead of inhabiting rocky precipices and lofty mountains, as do the eagles, it prefers the haunts of low and marſhy grounds, in the vicinity of pools and lakes that abound with fiſh. It appears that we muſt aſcribe to the *Oſprey*, and not to the *Sea-Eagle*, what Ariſtotle mentions with regard to the purſuit of ſea-birds; for the Sea-eagle fiſhes rather than hunts; nor have I heard that it ſtrays to a diſtance from the beach in the chace of gulls and other ſea-birds: on the contrary, it ſeems to ſubſiſt entirely upon fiſh. Thoſe who have diſſected this bird, have found nothing but fiſh in its ſtomach; and its fleſh, which as I have ſaid, has a very ſtrong ſmell of fiſh, is a ſufficient proof that this conſtitutes its ordinary food. It is commonly very fat, and can, like the eagles, ſupport for ſeveral days the want of ſuſtenance, without ſuffering inconvenience or loſs of ſtrength. It

is

is not ſo bold or ſo ferocious as the eagle or erne; and it is pretended that it could be as eaſily inſtructed for fiſhing, as the other birds are trained for the ſport.

After comparing authorities, I am of opinion that this ſpecies is one of the moſt numerous of the large birds of prey; and is ſcattered over the extent of Europe, from Sweden to Greece; and that it is even found in warmer countries, as in Egypt and Nigritia.

The internal parts of this bird differ little from thoſe of the eagles. The academicians have perceived the moſt conſiderable diſtinction in the liver, which in the Sea-eagle is very ſmall. The *cæcum* of the female alſo is not ſo large; and the ſpleen, which in the eagle is cloſely attached to the right ſide of the ſtomach, is in this bird placed under the right lobe of the liver. Like thoſe of moſt other birds, its kidneys are proportionally large, whereas thoſe of the eagle are ſmall [A].

[A] The ſpecific character which Linnæus gives of the Oſprey, *Falco Haliaëtos*, is, "that its cere and feet are cœrulean, its body "duſky above and white below, and its head whitiſh." Beſides the *Carolina Oſprey*, which is ranged by Buffon among the foreign analogous birds, there are two other varieties: 1. The *Reed Oſprey*, *Falco Arundinaceus*, GMEL.—"Its cere is aſh-coloured, its "feet pale, its body grey above and whitiſh below, and its tail "is equal." 2. The *Cayenne Oſprey*, *Falco Cayanenſis*, GMEL.—"Its body is duſky ferruginous, and there is a white line drawn "from the upper mandible through each eye to the hind part of "the head, which is alſo white."

The SEA-EAGLE.

L'Orfraie, Buff.
Falco Oſſifragus, Linn.
Aquila Oſſifraga, Briſſ. and Klein.
In Italian, *Aquilaſtro anguiſta barbata.*
In German, *Groſſer haſenabr.*
In Poliſh, *Orzel-Lomignat.*

THIS bird has been called by our nomenclators, the *Great Sea-Eagle.* It is indeed nearly as large as the Golden Eagle; and its body ſeems proportionally longer, though its wings be ſhorter. It meaſures, from the end of the bill to the point of the nails, three feet and an half; but its expanded wings do not reach above ſeven feet: whereas the length of the Golden Eagle is generally only three feet two or three inches, and the extenſion of its wings eight or nine feet. The Sea-Eagle is remarkable for its ſize, and is diſtinguiſhed: 1. By the colour and figure of its nails, which are of a ſhining black, and form an entire ſemicircle. 2. By its legs, which are naked below, and covered with ſmall yellow ſcales. 3. By the beard of feathers which hangs from the chin, and which has occaſioned its receiving the name of *Bearded-Eagle.* The Sea-Eagle loves to haunt the ſea-ſhore, and often frequents inland tracts,

THE SEA EAGLE

tracts, near lakes, marshes, or rivers that are stocked with fish. It catches the largest of the finny tribe; but it also attacks game, and, as it is large and strong, it seizes and carries off geese and hares, and even lambs and kids. Aristotle assures us, that the female Sea-Eagle not only watches her infant brood with the greatest affection, but extends her protection to the young eaglets, which have been expelled by their unfeeling parents, and generally feeds and trains them as if they were her own offspring. This singular fact has been repeated by all the naturalists, but it does not appear to be authenticated. We have reason however to admire the general accuracy of his History of Animals. We have a remarkable proof of this in point:—Aristotle observes, that the sight of the Sea-Eagle is weak, on account of a shade which covers the eye; and hence he was probably induced to separate it from the eagles, and class it with the owls and night birds. To judge of this fact by the consequences, we should infer, that it is not only doubtful, but false; for all who have watched the manœuvres of the Sea-Eagle, have found that it sees during the night so distinctly as to be able to catch game, and even fish; but they have not observed that its sight was feeble during the day. On the contrary, it perceives at a great distance, the fish upon which it is to dart; it pursues with eagerness the birds on which it is to prey; and though it flies with less rapidity than

than the eagles, this is owing to the ſhortneſs of its wings, and not the indiſtinctneſs of its viſion. A reſpect for the great philoſopher of antiquity has induced the celebrated Aldrovandus to examine the eye of the Sea-Eagle with minute attention; and he has diſcovered that the aperture of the pupil, which is commonly covered only with the cornea, is in this bird lined beſides with an exceedingly delicate membrane, which has actually the appearance of a ſmall ſpot. He alſo obſerved, that the inconvenience of this ſtructure is compenſated by the perfect tranſparency of the circular part ſurrounding the pupil, which ring in other birds is opaque and of a dull colour. Thus the obſervation of Ariſtotle is good, ſince he has remarked that the eye of the Sea-Eagle is covered with a thin cloud; but it does not neceſſarily follow, that its ſight is fainter than that of other birds, becauſe the light can paſs eaſily and largely through the ſmall circle which bounds the pupil; all that can be inferred is, that the middle of the picture muſt be marked with a ſmall obſcure ſpot, and that the lateral viſion ought to be more diſtinct than the direct. It is not however manifeſt from what has been ſaid, that it ſees worſe than the other birds. It ſoars not indeed to the ſame height as the eagle, nor flies with equal rapidity; nor does it deſcry or purſue its prey from ſo remote diſtances. It is probable, therefore, that the ſight of the Oſprey is not ſo acute

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or diſtinct as that of the eagle; at the ſame time it is not, like the owls, blinded by the dazzling light, but ſearches for victims in the day as well as in the night *, particularly in the mornings and evenings. Beſides, if we compare the eye of the Sea-Eagle with that of the owl and other nocturnal birds, we ſhall perceive a difference of ſtructure. In the day-time theſe birds ſee faintly, if at all; their delicate organs being unable to bear the ſhock of a blaze of light; their pupil is entirely open, and not lined with that membrane or ſmall ſpot, which is found in the eye of the Sea-Eagle. The pupil in all nocturnal birds, cats, and ſome other quadrupeds, which ſee in the dark, is round and large, when it receives the impreſſion of a faint light in the duſk of the evening. On the contrary, it becomes elongated in cats, but in the nocturnal birds, it retains its globular figure, though it contracts its ſize, when the eye is expoſed to a ſtrong glare. This contraction evidently proves that theſe birds ſee *ill*, becauſe they ſee too *well;* ſince their delicate organs are ſenſible to the fainteſt impreſſion. Wherefore, *à fortiori*, the Sea-Eagle, with its ſpot upon the pupil, would require more light than any other, if this de-

* I have been informed by perſons who obſerved the fact, that the Sea-Eagle catches fiſh during the night, and that the noiſe of its plunging into the water is heard at a great diſtance. Salerne alſo remarks, that when it darts into a pool to ſeize its prey, the noiſe it occaſions is terrible, eſpecially in the night.

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fect were not compenſated. But what forms a complete apology for Ariſtotle's arranging it among the nocturnal birds is, that the ſight of the Sea-eagle is not ſo acute as that of the Common Eagle; and becauſe it commits its ravages by night as well as by day.

If the facts related by Ariſtotle in his Hiſtory of Animals, be diſtinguiſhed by their accuracy, his treatiſe *De Mirabilibus* is no leſs remarkable for its abſurdities and errors. The author even makes aſſertions in it which are totally inconſiſtent with what he has delivered in his other works; and if we were to compare the opinions, but particularly the facts, with thoſe in his Hiſtory of Animals, we never ſhould aſcribe the treatiſe *De Mirabilibus* to that enlightened philoſopher. Pliny, whoſe Natural Hiſtory is entirely extracted from Ariſtotle, would not have related ſo many things that are falſe or equivocal, had he not borrowed indiſcriminately from the different treatiſes attributed to the Greek, and collected the opinions of ſubſequent authors which are tinctured conſtantly with popular prejudices. We can give an example without deviating from our preſent ſubject. Ariſtotle diſtinguiſhes the ſpecies of the Oſprey in his Hiſtory of Animals, ſince he makes it the fifth ſpecies of eagles, to which he gives accurate diſcriminating characters. At the ſame time, the Oſprey conſtitutes not a diſtinct ſpecies in the treatiſe *De Mirabilibus*, or rather is only a variety.

variety. Pliny, enlarging on this idea, affirms not only that the Oſpreys form no ſeparate race, and that they proceed from the intermixture of the different ſpecies of eagles, but that the young are not Oſpreys, and only Sea-Eagles; *which Sea-Eagles*, ſays he, *breed ſmall vultures, which engender great vultures, that have not the power of propagation.* What a number of incredible circumſtances are grouped into this paſſage? How many things that are abſurd, and contrary to every analogy? Let us even extend, as much as poſſible, the probable limits of the variations of Nature, and let us give this paſſage the moſt favourable explanation. Suppoſe for a moment, that the Oſpreys are really the hybriduous offſpring of the union of two different ſpecies of eagles; that they are prolific, like the croſs-breed of ſome other birds, and produce between them a ſecond mongrel, which approaches nearer the ſpecies of Sea-Eagle than if the firſt mixture were that of the Sea-Eagle with another eagle; ſo far the laws of Nature are not entirely violated: but to add, that theſe Oſpreys, after they become Sea-Eagles, breed ſmall vultures, and theſe again the great, which are incapable of generation, is to join three facts that are abſolutely incredible, to two that already can hardly be believed. And though Pliny has written many things haſtily, I can hardly perſuade myſelf that he is the author of theſe three aſſertions; and I am rather inclined to ſuppoſe,

that the end of the ſentence has been entirely altered. At any rate it is certain that the Sea-Eagles never breed ſmall mongrel vultures, nor do theſe give birth to large hybriduous vultures, whoſe prolific powers are extinguiſhed. Every ſpecies of vulture produces its like, and the ſame is the caſe with each of the eagles, the Oſprey and the Sea-Eagle; and the intermediate kinds, bred by the intermixture of the eagles, conſtitute independent tribes, and are perpetuated like the others by a generation. Particularly, we are well informed, that the male Oſprey breeds with its female young Oſpreys; and that, if it ever begets Sea-Eagles, this is only in the union with the Sea-Eagle. The copulation of the male Oſprey with the female Sea-Eagle is ſimilar to that of the he-goat with the ewe: a lamb is the fruit of this commerce, becauſe the influence of the ewe predominates in the conception. A Sea-Eagle is alſo the product of the other intercourſe; for, in general, the character of the female preponderates, and the prolific mongrels approach to the ſpecies of the mother; and even the true hybrids, or the barren mongrels, bear a greater reſemblance to the race of the female than to that of the male.

What renders the poſſibility of the croſs-breed of the Sea-Eagle and the Oſprey credible, is the ſimilarity of the inſtincts, the diſpoſitions, and even the figure of theſe birds; for though they

they differ widely in point of ſize, the Sea-Eagle being near one half larger than the Oſprey, they are yet very much alike in their proportions. Their wings and legs are ſhort, compared with the length of their body; the lower part of their legs and feet are naked; they fly neither ſo high nor ſo rapidly as the eagles; they derive their ſubſiſtence more from the finny tribe than from the beaſts of game; and they haunt places contiguous to lakes or fiſhy ſtreams; and both of them are common in France and other temperate countries. The Sea Eagle, as it is larger, lays only two eggs, and the Oſprey four *. The cere of the Oſprey and the legs and feet are generally blue, but the ſame parts of the Sea-Eagle are of a bright deep yellow. There is alſo ſome difference in the diſtribution of the colours of the plumage, but this is too ſlight to prevent their intermixture; and ana-

* The Sea-Eagle builds on the loftieſt oaks a very broad neſt, into which it drops two very large eggs, that are quite round, exceedingly heavy, and of a dirty white colour. Some years ago one of theſe was found in the park of Chambord; I ſent the two eggs to Reaumur, but the neſt could not be detached. Laſt year a neſt was diſcovered at St. Laurent-des-eaux, in the wood of Briou, but there was only one eaglet, which the poſt-maſter of that place has raiſed. At Bellegarde, in the foreſt of Orleans, a Sea-Eagle was killed, which during the night fiſhed the largeſt pikes in a pond that belonged formerly to the Duc d'Antin. Another was killed lately at Seneley in Sologne, in the moment it was carrying off a large carp in broad day. The Oſprey lodges among the reeds, along the margin of waters; it lays each hatch four white eggs of an elliptical ſhape: it feeds on fiſh. SALERNE.

logical reaſons induce me to ſuppoſe that the union is prolific, and that the male Oſprey, by coupling with the female Sea-Eagle, produces Sea-Eagles; but that the female Oſprey, by pairing with the male Sea-Eagle, gives birth to Oſpreys; and that ſuch hybrids, whether they be Sea-Eagles or Oſpreys, inherit almoſt entirely the nature of their mother, and retain but ſlight traces of the character of the father; which circumſtance diſtinguiſhes them from legitimate Oſpreys or Sea-Eagles. For example; Oſpreys ſometimes occur with yellow feet, and Sea-Eagles with blue feet, though the reverſe commonly takes place. This variation of colour muſt ariſe from the mixture of the two ſpecies. For the ſame reaſon, Oſpreys are found, ſuch as what the members of the Academy have deſcribed, that are much larger than ordinary; and at the ſame time ſome Sea-Eagles are much ſmaller than common; and the diminutive ſize of theſe can be aſcribed neither to the ſex nor to the age, but muſt ariſe from a mixture with the ſmaller ſpecies; that is, of the Oſprey with the Sea-Eagle.

As this bird is very large, and conſequently little prolific, laying only two eggs once a year, and often raiſing but a ſingle young one, the ſpecies is no where numerous. It is however widely diffuſed; it is found in almoſt every part of

of Europe, and it even appears to frequent the lakes of North America*. [A]

* I conceive that the following paſſage alludes to the Sea-Eagle; "There are a number of eagles, which in their language are called *ſondaqua*. They commonly build their neſts on the margin of water, or of ſome precipice which overtops the higheſt trees or rocks, ſo that it is difficult to reach their neſts. We have however got ſeveral, but never found more than two eaglets. I intended to breed ſome when we were on the road from Lake Huron to Quebec; but they being heavy to carry, and we not being able to give them fiſh to feed on, we dreſſed them into an excellent diſh, for they were then young and tender." *Voyage au Pays des Hurons par Sagar Theodat.*

[A] The Sea-Eagle, *Falco oſſifragus*, LINN. is thus deſcribed: "Its cere is yellowiſh, its feet partly woolly, its body ferrugi-"nous, the tail-feathers white along the inſide." It reſembles the Golden Eagle, and is of the ſize of a turkey. It is ſometimes drowned in attempting to catch overgrown fiſh; not being able to diſengage its talons, it is dragged forcibly under water. The Tartars entertain a notion that the wound of its claws is mortal, and therefore they dread its attack.

The WHITE JOHN*.

Jean le Blanc, Buff. *and* Lath.
Falco Gallicus, Linn.
Falco Hypoleucos, Decouv. Ruſſ.
Aquila Pygargus, Briſſ. Johnſt. Belon.
L'Albanella, Let. uc Sard.
Blanche-Queue, Hiſt. de Lyon.

I HAD this bird alive, and kept it for ſome time. It was taken young in the month of Auguſt 1768, and it appeared in January 1769 to have attained its full ſize. Its length, from the point of the bill to the extremity of the tail, was two feet; and to the pounces one foot eight inches: the bill from the hook to the junction of the mandible ſeventeen lines; the tail was ten inches long; its wings when expanded meaſured five feet one inch, and when cloſed they reached a little beyond the end of the tail. The head, the upper ſurface of the neck, the back, and the rump, were of an aſh-brown; all the feathers which cover theſe parts were white at their origin, but the reſt of them brown; ſo that the brown concealed the white, except the

* "Some have called it *The White-tailed Knight*, becauſe perhaps it is rather tall.——The male is lighter and whiter than the female, particularly on the rump; the tail very long, the legs ſlender, and of a pleaſant yellow."—SALERNE.

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THE WHITE JOHN

plumage was raiſed. The throat, the breaſt, the belly, and the ſides were white, variegated with long ſpots of a brown ruſty colour; there were tranſverſe bars of a deeper brown upon the tail; the cere was of a pale blue, and in it were placed the noſtrils. The iris was of a beautiful yellow citron, or of the colour of the oriental topaz; the feet were of a pale fleſh hue, which, as well as the cere, paſſed into yellow as the bird grew older. The interſtices of the ſcales which covered the ſkin of the legs, appeared reddiſh; ſo that the whole, ſeen at a diſtance, appeared, even in its tender age, to be yellow. This bird weighed three pounds ſeven ounces after a meal, and three pounds four ounces when its ſtomach was empty.

The *White John* is more widely removed from the eagles than any of the preceding. It reſembles the *Bald Eagle* only by the want of plumage on the legs, and the whiteneſs of the rump and tail; but its body is differently ſhaped, and is much thicker, compared with its bulk; for its extreme length is only two feet, and the expanſion of its wings ſeven feet; while the girth of its body is as great as that of the Ring-tail Eagle, the length of which is two feet and an half, and the alar extent more than ſeven. Hence the *White John* reſembles in its ſhape the Oſprey, whoſe wings are alſo ſhort in proportion to its body; but its feet are not, as in that

bird, blue: its legs alſo appear to be more ſlender and tapered than any of the Eagles. Thus, though it bears ſome analogy to the Eagles, the Oſprey, and the Sea-eagle, it is yet quite a diſtinct ſpecies. It has ſome reſemblance alſo to the Buzzard in the diſpoſition of its colours, of its plumage, and alſo in a circumſtance which has often ſtruck me, viz. that, in certain attitudes, and eſpecially in the front view, it appears like an Eagle; and that, ſeen ſideways or in other attitudes, its figure is ſimilar to that of the Buzzard. This remark was alſo made by my deſigner and others; and it is ſingular that this ambiguity of figure correſponds to its equivocal diſpoſition, which is really analogous both to that of the Eagle and that of the Buzzard; inſomuch that the White John may, in certain reſpects, be conſidered as forming the intermediate ſhade between theſe two birds.

It appeared to me that this bird ſaw very diſtinctly in the day-time, and was not afraid of the ſtrongeſt light; for it ſpontaneouſly directed its eyes to the moſt luminous quarter, and even to the ſolar effulgence. It ran with conſiderable ſwiftneſs when ſcared, and aſſiſted its motion by its wings. When confined to its chamber, it ſought to approach the fire; but cold did not ſeem to be abſolutely pernicious to it, for it paſſed ſeveral nights in open air in froſty weather without appearing to ſuffer inconvenience.

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It fed upon raw bloody flesh; but, when pinched with hunger, it ate meat that had been cooked. It tore the flesh that was offered it with its bill, and swallowed it in large morsels. It never drank when any person was beside it, or was within its sight; but when it was in a concealed place, it was observed to drink, and to use more precaution than might be expected. A vessel filled with water was left within its reach; it looked anxiously on every side, to ascertain that it was quite alone; it then approached the vessel, but still cast an attentive look around: at last, after many hesitations, it plunged its bill up to the eyes in the water, and repeated its draught. It is probable that other birds of prey conceal themselves in the same manner when they want to drink; the reason probably is, that these birds can take no liquid but by immersing their head beyond the opening of the mandibles, and even as far as the eyes; in which case, they are thrown off their guard, and have reason to entertain fears: however, this is the only circumstance in which the White John shewed any mistrust; and in other things he appeared indifferent, or rather stupid. He was not at all mischievous, and suffered himself to be handled without discovering resentment. He uttered the sound, *co*, *co*, a slight expression of contentment when food was offered him; but he shewed no particular attachment to any individual. He grew fat in the autumn, and got more

more fleſh, and became plumper than moſt other birds of prey *.

This bird is very common in France; and, as Belon ſays, there is hardly a cottager who is not acquainted with it, and who dreads not its ravages among his poultry. The peaſants have given it the name of *White John* †, becauſe it is remarkable for the whiteneſs of its belly, of the under ſurface of its wings, of its rump, and of its tail: theſe characters, however, are diſtinctly

* The following note reſpecting this bird was given to me by the perſon entruſted with my volaries:—"I offered the White John ſeveral kinds of food; as bread, cheeſe, grapes, apples, &c. but he would taſte none of them, though he had faſted twenty-four hours. I kept him in that ſtate three days longer, and he ſtill rejected them. In ſhort, we may conclude, that hunger will never drive him to eat any thing of that ſort. I gave him worms, but he conſtantly rejected them; and though one was forced into his bill, and half ſwallowed, he threw it out. He greedily ſwallowed mice entire; and I obſerved, that after ſwallowing two or three, or even a ſingle large one, he ſhewed uneaſineſs, and marks of pain, drooping and inactive, and ſtupid with digeſtion. I preſented frogs and ſmall fiſh; the latter he rejected, but ate the frogs by half-dozens, and ſometimes more; but he did not ſwallow them whole as he did the mice; he fixed his talons, and tore them into pieces. I withheld food from him three days, and he ſtill refuſed raw fiſh. I obſerved that he vomited the ſkins of the mice in little balls of an inch, and I found, by ſteeping them in water, that they contained only the hair and the ſkin, and not the bones: in ſome of theſe balls were particles of caſt iron, and bits of coal."

† "The inhabitants of the villages know this bird to their coſt; for it plunders their poultry more daringly than the kite." Belon.

"This White John attacks the hens in the villages, and catches birds and rabbits. It is very deſtructive to partridges, and preys on ſmall birds; for it plunders, concealed along the hedges, and the ſkirts of the foreſts; ſo that not a peaſant is unacquainted with it." *Id.*

marked only in the male; for the female is almoſt entirely grey, and the feathers of the rump alone of a dirty white. As in the other birds of prey, ſhe is larger than her mate; ſhe neſtles almoſt cloſe upon the ground, in tracts covered with heath, fern, broom, or ruſhes; ſometimes, however, ſhe builds on firs, and other high trees. She commonly lays three eggs, which are of a grey ſlate-colour; the male provides largely for her ſubſiſtence during the time of incubation, and even while ſhe is employed in watching and educating her young. He haunts the vicinity of inhabited places, eſpecially near hamlets and farms; he plunders chickens, young turkies, and tame ducks; and when poultry cannot be had, he catches young rabbits, partridges, quails, and other ſmall birds; nor does he diſdain the more humble prey of field-mice and lizards. As this bird, particularly the female, has ſhort wings and a thick body, the flight is laborious, and they never riſe to a great height; they conſtantly ſkim along the ground, and commit their ravages upon the earth rather than in the air *. Their cry is a kind of ſhrill whiſtling, which is ſeldom heard. They ſcarcely ever ſeek their prey but in the morning and the evening; and the middle of the day is devoted to indolence and repoſe.

* "When we obſerve it flying, it appears like a heron; for it ruſtles with its wings, and does not ſoar like many other birds of prey, but generally flies near the ground, eſpecially in the morning and evening."—BELON.

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One ſhould be apt to ſuppoſe that there is a variety in this ſpecies; for Belon gives a deſcription of a ſecond bird, "which is," he ſays, "another ſpecies of the St. Martin, alſo named "*White-tail*, of the ſame ſpecies with the above-"mentioned White John, and which reſembles "the Royal Kite ſo exactly that we could diſ-"cover no difference, except that it is ſmaller, "and whiter under the belly, the feathers of its "rump and tail being on both ſides of a white "colour." Theſe points of reſemblance, to which we may add what is ſtill more important, that its legs are longer, prove only that this ſpecies is allied to that of the White John: but as it differs conſiderably in its ſize, and in other circumſtances, we can but infer that it is a variety of the White John; and we have perceived that it is the ſame bird which our nomenclators have called the *Cinereous Lanner*; and which we ſhall mention under the name of St. Martin, becauſe it has not the leaſt reſemblance to the *Lanner*.

The White John, though very common in France, is unfrequent in every other country; ſince none of the naturaliſts of Italy, England, Germany, or the North, mention it, except from the authority of Belon. For this reaſon I have dwelt more fully upon the facts relating to its hiſtory. I muſt alſo obſerve, that Salerne commits a great miſtake, when he ſays that this bird is the ſame with the *Ringtail* of the Engliſh,

liſh, the male of which is termed *Hen-harrier*. The character of the White-tail, and the proneneſs to prey on poultry, common to the Ring-tail and the White John, have deceived him, and induced him to conſider theſe birds as the ſame; but if he had compared the deſcriptions of preceding authors, he would have eaſily perceived that they belong to different ſpecies. Other naturaliſts have taken the *Blue-hawk* of Edwards for the *Hen-harrier*, though theſe birds are alſo of different kinds. We ſhall endeavour to clear up this point, which is one of the moſt obſcure in the natural hiſtory of the rapacious tribe.

Birds of prey are divided into two orders: the firſt of which includes the warlike, the noble, and the intrepid; ſuch as Eagles, Falcons, Ger-falcons, Gos-hawks, Lanners, Sparrow-hawks, &c.: the ſecond comprehends thoſe that are indolent, cowardly, and voracious; ſuch as, the Vultures, the Kites, the Buzzards, &c. Between theſe two orders, ſo oppoſite in their inſtincts and habits, are found, as every where elſe, ſome intermediate ſhades, or ſome ſpecies which participate of the character of both. Theſe are: Firſt, The White John, of which we have now treated, and which, as we have ſaid, is a-kin to the Eagle and the Buzzard. Secondly, The St. Martin, which Briſſon and Friſch have called the *Cinereous Lanner*, and Edwards has named the *Blue Falcon*, but which reſembles more

more the White John and the Buzzard than the Falcon or Lanner. Thirdly, The *Sou-buſe*, with which ſpecies the Engliſh ſeem not to have been well acquainted, having taken another bird for the male, whoſe female they have named *Ring-tail*, and the pretended male *Hen-harrier*. Theſe are the birds which Briſſon has called *Collared Falcons;* but they have more affinity with the Buzzard than the Falcon or the Eagle. Theſe three ſpecies, and particularly the laſt, have been miſrepreſented, or confounded, or improperly named; for the White John ought not to be ranged among the eagles. The St. Martin is neither a Falcon, as Edwards ſays; nor a Lanner, as Friſch and Briſſon aſſert; for in its inſtinct it is different, and in its habits it is oppoſite to thoſe. It is the ſame with the *Sou-buſe*, which is neither an eagle nor a falcon, ſince its appetites are entirely diſſimilar to thoſe of theſe two ſpecies.

But I am of opinion that we ought to claſs with the White John, with which we are well acquainted, another bird, known only by the indication of Aldrovandus, under the name of *Laniarius;* and of Schwenckfeld, under that of *Milvus albus*. This bird, which Briſſon has alſo called the *Lanner*, appears to me to be more different from the true Lanner than the St. Martin. Aldrovandus deſcribes two of theſe birds; the one of which is much larger than the other, being two feet from the point of the bill

bill to the end of the tail, and is of the ſize of the White John; and appears, from comparing the account of that naturaliſt, to have the ſame characters. Nor need we be ſurpriſed that Aldrovandus, whoſe ornithology is on the whole excellent, eſpecially with regard to the European birds, ſhould commit this overſight, ſince he derives his acquaintance of the White John entirely from Belon*, and has even borrowed his figure. [A]

* *Pygargi ſecundum genus.* ALDROV.

[A] The White John, *Falco Gallicus*, LINN. The ſpecific character:—"The bill cinereous; the feet naked and yellowiſh; the body of a duſky grey, and below (in the male) whitiſh, with tawny ſpots."

FOREIGN BIRDS,

RELATED TO THE EAGLES AND OSPREYS.

I.

THE Bird of the Eaſt Indies, which Briſſon deſcribes accurately, by the name of the *Pondicherry Eagle*. We ſhall only obſerve, that its diminutive ſize alone ought to exclude it from the Eagles, ſince it is only half the bulk of the ſmalleſt. It reſembles the Oſprey in the colour of the cere, which is bluiſh; but its feet are not blue as in that bird, nor yellow as in the Erne. Its bill, of an aſh-colour at its origin, and of a pale yellow at the tip, ſeems to participate of the colours of the Eagle and the Erne: and theſe differences ſufficiently point out this bird as a diſtinct ſpecies. It is probably the moſt remarkable bird of prey on the Malabar coaſt, ſince the natives make an idol of it, to which they pay adoration*; but the beauty of its

* The Malabar Eagle is as beautiful as it is rare. Its head, neck, and the whole of its breaſt, are covered with exceedingly white feathers, longer than broad, the ſhaft and edge of which are of a fine jet black. The reſt of the body is of ſhining cheſnut, lighter beneath the wings than above; the ſix firſt wing-feathers are black at the end; the cere bluiſh; the tip of the bill yellow, verging on green; the feet yellow; the nails black. It has a piercing look, and is of the bulk of the falcon. It is a ſort of divinity worſhipped by the people of Malabar. It occurs alſo in the kingdom of Viſapour, and in the territories of the Great Mogul. —SALERNE.

plumage

plumage, rather than its bulk or ſtrength, merits this honour. It is undoubtedly the moſt elegant of the rapacious tribe.

[A] This bird is the Pondicherry Eagle of Latham, and the *Falco Ponticerianus* of Linnæus. "The cere ſky-coloured; the "body cheſnut; the head, neck, and breaſt, white, variegated "with duſky lines; the ſix primary wing-feathers black from "their middle to the tips."

II.

The Bird of South America, deſcribed by Marcgrave under the name *Urutaurana*, which it receives from the Indians in Braſil, and mentioned by Fernandes by the name of *Yſquauthli*, by which it is called in Mexico. It is what our French travellers have termed the *Oronooco Eagle* *, a name which has been adopted by the Engliſh. It is ſomewhat ſmaller than the Common Eagle, and reſembles the Spotted or Rough-footed Eagle by the variety of its plumage. But it has ſeveral ſpecific characters: the tips of its

* The Antilles are often viſited from the continent by a ſort of large bird, which muſt be ranked at the head of the birds of prey in America. The natives of Tobago have called it the *Oronooco Eagle*, becauſe it is of the bulk and the figure of an Eagle; and becauſe they hold that this bird, which appears only occaſionally in the iſland, frequents the banks of the great river Oronooco. All its plumage is light grey, except the tips of the wings and of the tail, which are edged with yellow. Its eyes are lively and piercing; its wings very long; its flight rapid and ſpeedy, conſidering the weight of its body. It ſubſiſts on other birds, on which it darts with fury, tears them in pieces and ſwallows them. It attacks the *arras* and paroquets. It has been obſerved, that it never attacks the bird when on the ground, or ſitting on a branch, but waits till it riſes, and ſeizes it on the wing." Du Tertre, *Hiſt. Nat. des Antilles.*

wings and tail are edged with a whitiſh yellow; two black feathers about two inches long, and two other ſmaller ones, are placed on the crown of the head, and can be raiſed or depreſſed at pleaſure; the legs are clothed to the feet with white and black feathers, imbricated like ſcales; the iris is of a bright yellow; the cere and the feet are alſo yellow, as in the Eagles; but the bill is of a darker, and the nails of a lighter ſhade:—Theſe differences are ſufficient to diſtinguiſh this bird from thoſe that have been mentioned in the preceding articles; but to the ſame ſpecies we muſt, I imagine, refer what Garcilaſſo calls the *Eagle of Peru*, and which, he ſays, is ſmaller than the Eagles in Spain.

Of the ſame ſpecies, or at leaſt of a proximate one, is alſo the bird found on the weſt coaſt of Africa, of which Edwards gives an elegant coloured figure, with an excellent deſcription, under the name of *Crowned Eagle* *.

The

* This bird, ſays Edwards, is about a third ſmaller than the largeſt European Eagles, and appears bolder and more intrepid than the others. The bill with the cere, in which the noſtrils are placed, is of a dull brown; it is cleft as far as the eyes, and the edges of the mandibles are yellowiſh at the inſertion; the iris is reddiſh orange; the fore-part of the head, the orbits, and the throat, are covered with white feathers, ſprinkled with ſmall black ſpecks; the hind part of the neck and of the head, the back and the wings, are of a deep brown, verging on black; but the outer edges of the feathers are light brown. The quill-feathers are of a deeper colour than the others in the wings; the ſides of the wings near the top, and the ends of ſome of the coverts of the wings, are white; the tail is of a deep grey, interſected with black bars, and the under part appears

The diſtance between Braſil and Africa, which ſcarcely exceeds four hundred leagues, is not too great a journey to be performed by a bird of an aërial flight; and therefore it is poſſible that it may be found on both coaſts. The characters are ſufficient to decide the identity of the ſpecies; both have a ſort of creſts which they can depreſs at pleaſure, and both are nearly of the ſame ſize; in both the plumage is variegated, and ſimilarly marked with ſpots; the iris is of a bright orange; the bill, blackiſh; the legs covered to the feet with feathers, and marked with black and white; the toes yellow, and the nails brown or black. In ſhort, the ſole difference conſiſts in the diſpoſition of the colours, and in the ſhades of the plumage, which bears no compariſon to the points of conformity. I ſhall not heſitate therefore to conſider the birds of the coaſts of Africa as of the ſame ſpecies with that

appears of a dull aſh grey; the breaſt is of a reddiſh brown, with large tranſverſe ſpots on the ſides; the belly is white, and alſo the under part of the tail, which is marked with black ſpots; the thighs and legs are covered to the nails with white feathers prettily marked with round black ſpots; the nails are black, and very ſtrong; the toes are covered with ſcales of a vivid yellow; it erects the feathers on its head like a crown, whence it is named. I drew this bird alive at London in 1752; its owner aſſured me that it came from the coaſt of Africa; and I am the more willing to believe it, as I have two others of the ſame ſpecies belonging to another perſon, and which were brought from Guinea. Barbot mentions this bird by the name of the *Crowned Eagle*, in his Deſcription of Guinea: he has given a bad figure of it; but ſtill we may perceive that the feathers riſe on the head in a way very little different from that repreſented in mine. EDWARDS.

of Braſil; and that the Crowned Eagle of Braſil, the Oronooco Eagle, the Peruvian Eagle, the Crowned Eagle of Guinea, are all the ſame individual, and have the neareſt reſemblance to the Spotted or Rough-footed Eagle of Europe.

[A] Linnæus ranges this bird with the Vulture, Gmelin with the Falcon, and both apply the epithet *Harpyia*; Latham calls it the Creſted-vulture. It is ſaid to cleave a man's ſkull with one ſtroke of its bill, and to be as large as a ram. There is a variety of this in New Grenada, which has a black creſt, a white belly, thighs ſpotted white, the tail long, and variegated with white and black. When young it can be tamed.

III.

The Bird of Brazil, mentioned by Marcgrave by the name of *Urubitinga*, which is probably a different ſpecies from the preceding, ſince it receives another name in the ſame country. In fact, it differs, firſt, by its ſize, being an half ſmaller; ſecond, by its colour, being of a blackiſh brown, inſtead of a fine grey; third, by its want of erect feathers on the head; fourth, becauſe the under part of its legs and feet are naked, as in the Erne, while the preceding is, like the Eagle, feathered to the talons.

IV.

The Bird which we ſhall call the *Little American Eagle*, which has not been deſcribed by any naturaliſt, and which is found at Cayenne and other parts of South America, is ſcarcely ſixteen or eighteen inches long; and is diſtinguiſhed at the firſt glance by a purpliſh red ſpot under

under its neck and throat. It is ſo ſmall that we ſhould be inclined to claſs it with the Sparrow-hawks or Falcons; but the ſhape of its bill, which is ſtraight at its inſertion, and begins its curve at ſome diſtance from the origin, has determined us to refer it to the Eagles.

[A] This is the *Red-throated Falcon* of Latham, the *Falco Aquilinus* of Gmelin, and the *Falco Formoſus* of Linnæus. Its ſpecific character is, "That its cere, orbits, and feet, are yellowiſh; its "throat purple; its body of a cærulean red; its abdomen fleſh-"coloured."

V.

The Bird of the Antilles, called *the Fiſher* by Father Tertre, and which is probably the ſame with that mentioned by Cateſby by the name of the *Fiſhing-hawk of Carolina*. It is, ſays he, of the ſize of a Gos-hawk, but with a longer body; its wings, when cloſed, ſtretch a little beyond the extremity of the tail, and when expanded meaſure more than five feet. Its iris is yellow; its cere blue; its bill black; its feet of a pale blue; its nails black, and almoſt all of the ſame length; the upper part of the body, of the wings, and of the tail, is dark brown; all the under parts are white; the feathers on the legs are white, ſhort, and applied cloſe to the ſkin. "The Fiſher," ſays Father Tertre, "is exactly like the *Manſfeni*, except that "its ventral feathers are white, and thoſe on "the crown of the head black; its claws are "ſomewhat ſmaller. This Fiſher is a real pi-"rate; it moleſts not the land-animals, or the

" birds of the air, but directs its attacks upon " the fiſh alone, which it deſcries from the top " of a branch, or the point of a cliff, and ob- " ſerving them at the ſurface of the water, it " inſtantly darts upon them, ſeizes them with " its talons, and retires to devour its prey on a " rock. Though it does not wage war againſt " the birds, it is purſued by them, and teaſed " and pecked by them, till it is obliged to ſhift " its place. The Indian children breed them " when young, and employ them to fiſh for " pleaſure merely, for they never give up their " ſeizure." This deſcription of Father Tertre is neither ſo particular nor ſo full as to warrant us to aſſert that the bird is the ſame with that mentioned by Cateſby; we ſhall therefore ſtate it only as a conjecture. But the American bird deſcribed by Cateſby, reſembles ſo nearly the European Oſprey, that we are inclined to believe that it is the ſame ſpecies, or at leaſt only a variety of it. Its colour is nearly the ſame; and ſo are alſo its ſize, figure, and habits.

[A] This is the *Carolina Oſprey* of Latham, and is a variety of the *Falco Haliaëtus* of Linnæus. " Its tail is of a duſky ſhade; " its crown black, or darkiſh, variegated with white; the belly " white."

VI.

The Bird of the Antilles, called by our travellers *Manſfeni*, and which they have reckoned a ſpecies of the Rough-footed Eagle (*Niſus*). The *Manſfeni*, ſays Father Tertre, is a ſtrong bird of prey, which in its form and plumage bears

bears ſo great a reſemblance to the Eagle, that its diminutive ſize is the only mark of diſcrimination, for it is ſcarcely bigger than the Falcon, but its claws are twice as large, and ſtronger. Though thus well-armed, however, it generally attacks only the defenceleſs birds; as the thruſhes, and the ſea-larks; or if more adventurous, the ring-doves and turtles: it feeds alſo on ſerpents and ſmall lizards. It perches commonly on the moſt lofty trees. Its feathers are ſo ſtrong and ſo compacted, that unleſs we fire oppoſite their poſition, the ſhot will not penetrate. Its fleſh is rather black, but yet of a pleaſant flavour.

The VULTURES*.

THE Eagles have been placed at the head of the birds of prey, not becauſe they are larger or ſtronger than the Vultures, but becauſe they are more generous, that is, not ſo meanly cruel; their diſpoſitions are bolder, their conduct more intrepid, and their courage nobler. They are ſtimulated to their attacks, as much from the glory of conqueſt as the appetite for plunder: the Vultures, on the contrary, are incited by a low gormandizing inſtinct; and they ſeldom attack living animals when they can ſatiate their voracity on the carcaſes of the dead ones. The Eagle makes a cloſe fight with his enemies or his victims; he purſues his prey alone and unaided, and ſingly raviſhes the plunder, contends with, and ſecures his prey. The Vultures, on the contrary, when they expect

* [A] The following is the Generic Character of the Vultures, as given by the beſt ſyſtematic Writers:

The BILL ſtraight, blunt at the tip, and the baſe covered with ſkin.

The HEAD moſtly deſtitute of feathers, and naked ſkin on the forepart.

The TONGUE fleſhy, generally cloven.

The NECK retractile.

The FEET ſtrong, and the nails moderately incurvated.

the

N°5

THE VULTURE

the ſlighteſt reſiſtance, combine in flocks, like baſe aſſaſſins, and are rather robbers than warriors, birds of carnage than birds of prey. This tribe alone collect in numbers to pour upon the forlorn individual, and tearing the mangled carcaſe to the bones, they diſplay the bitterneſs of unprovoked rage. Corruption and infection, inſtead of driving them to a diſtance, are to them powerful attractions. Sparrow-hawks, falcons, and even the ſmalleſt birds ſhew more courage; for they ſeek their prey alone, and almoſt all of them reject putrid fleſh, and ſpurn a dead carcaſe. If we compare birds with the quadrupeds, the Vulture ſeems to unite the ſtrength and cruelty of the tiger with the cowardice and voracity of the jackals, which gather in troops to devour carrion, and dig up carcaſes; while the Eagle poſſeſſes, as we have ſaid, the courage, the generoſity, the magnanimity, and the munificence of the lion.

We muſt therefore ſeparate the Vultures from the Eagles by this difference of inſtinct; and their external appearance ſufficiently marks the diſtinction. Their eyes are raiſed, while thoſe of the Eagle are ſunk in the orbit; the head is bare, the neck almoſt naked, or covered with a ſlight down, or ſprinkled with a few ſtraggling hairs; while the Eagle is completely clothed with feathers: the nails of the Eagle are almoſt ſemicircular, ſince they ſeldom reſt upon the ground; while thoſe of the Vulture are ſhorter and leſs curved;

curved: their poſture is more inclined than that of the Eagle, which is boldly erect, and almoſt perpendicular upon its feet; while the Vulture, whoſe ſituation is half horizontal, ſeems to betray the baſeneſs of its character by the inclined poſition of its body. The Vultures can even be diſtinguiſhed at a diſtance; becauſe they are the only birds of prey that fly in flocks, that is, more than two or three together: beſides their flight is ſlow and laborious; it is painful for them to riſe from the ground; and they are obliged to make three or four attempts before they can ſucceed *.

We have included in the genus of Eagles three ſpecies, viz. the Golden Eagle, the Ring-tail Eagle, and the Rough-footed Eagle; and we have added thoſe birds which bear the greateſt reſemblance to them; ſuch as the Erne, the Oſprey, the Sea-Eagle, and the White John, and the foreign birds related to theſe: viz. 1. The Beautiful Bird of Malabar. 2. The Bird

* Ray, and Salerne, (who generally copies him word for word,) add another diſcriminating difference between the Vultures and the Eagles, viz. the ſhape of the bill, which is not curved immediately at its origin, but continues ſtraight for two inches before it bends. But I muſt obſerve, that this character is not preciſe; for in the Eagles alſo, the bill does not immediately begin its arch; the real difference is, that the ſtraight part is longer in the Vultures than in the Eagles. Other naturaliſts aſſign the prominence of the craw as the character of the Vultures; but this is equivocal, and does not belong to all the ſpecies. The Fulvous Vulture, which is one of the principal, ſo far from having a projection, is remarkable for a concavity under its neck.

of

of Brazil, Oronooco, Peru, and Guinea, called by the Indians of Brazil *Urutauana*. 3. The Bird called in the ſame country *Urubitinga*. 4. That which we have called the *Little American Eagle*. 5. The Bird Fiſher of the Antilles. 6. The *Mansfeni*, which appears to be a kind of the Rough-footed Eagle:—theſe conſtitute in all thirteen ſpecies, of which the *Little Eagle of America* has been mentioned by no naturaliſt. We proceed to make in the ſame manner the enumeration and reduction of the ſpecies of the Vultures, and we ſhall firſt treat of a bird which has been ranked among the Eagles by Ariſtotle, and after him by moſt authors, though it is really a Vulture.

The ALPINE VULTURE.

Le Percnoptere, Buff.
Vultur Percnopterus, Linn.
Falco Montanus Ægyptiacus, Haſſelq.
Vultur Aquilina, Alb.

THIS bird is by no means an Eagle, and is certainly a Vulture; or if we could follow the opinion of the ancients, it forms the laſt ſhade between theſe two kinds of birds, bearing a much cloſer reſemblance to the former than to the latter. Ariſtotle *, who ranges it among the Eagles, confeſſes himſelf that it is rather of the Vulture race, having, he ſays, all the bad qualities of the Eagles without any of their virtues; ſuffering itſelf to be purſued and haraſſed by the crows; indolent in the chace, and tardy in its motions; always crying and complaining; always famiſhed and ſearching for carrion. Its wings are alſo ſhorter, and its tail longer than the Eagles; its head is of a fine blue, the neck white and naked, or covered merely with a

* Ariſtotle makes it his fourth ſpecies of Eagle under the name of Περκνοπτερος, and afterwards applies the epithet of Ὑπαιλος, which Theodore Gaza properly tranſlates *Subaquila*. But others, and particularly Aldrovandus, have conjectured, that inſtead of Ὑπαιλος we ought to read Γυπαιλος, or *Vulturina aquila*. The fact is, that both theſe appellations ſuit this bird.

hoary

hoary down, with a collar of ſmall white hard feathers below the neck like a ruff; the iris is of a reddiſh yellow; the bill and the cere black, the hook of the bill whitiſh; the lower part of the feet and legs naked, and of a leaden colour; the nails are black, ſhorter, and ſtraighter than thoſe of the eagle. It is remarkable for a brown ſpot ſhaped like a heart, and edged with a ſtraight white line, and ſituated on the breaſt under the ruff. In general, this bird is of an ugly and ill proportioned figure; it has even a diſguſting appearance from the continual flux of rheum from its noſtrils, and the flow of ſaliva from two other holes in the bill; its craw is prominent; and when it is upon the ground, it keeps its wings always extended *. In ſhort, it reſembles the Eagle only by its ſize; for it is larger than the Ring-tail Eagle, and approaches the Golden-eagle in the thickneſs of its body, though the expanſion of its wings is leſs. This ſpecies ſeems to be more rare than thoſe of the other Vultures; it is found however in the Pyrenees, the Alps, and the mountains of Greece. [A]

* This habit of holding the wings extended is not peculiar to this ſpecies, but belongs to moſt of the Vultures, and many other birds of prey.

[A] Buffon ſeems to range with the Alpine Vulture another, which the ſyſtematic writers reckon a different ſpecies. It is the Vulturine Eagle of Albin, the *Vultur Barbatus* of Linnæus, the Alpine Vulture of Briſſon, the *Percnopterus Gypaëtos* of Ray, which Buffon mentions in the preceding note. "It is whitiſh flame-"coloured, the body duſky, with a black ſtripe above and below "the eyes."

The FULVOUS VULTURE.

Le Griffon, Buff.
Vultur Fulvus, Linn.
Vultur Ruber, Rzac.

THIS bird is ſtill larger than the Alpine Vulture; its wings extend eight feet; its body is thicker and longer than that of the Golden-eagle, the legs being more than a foot in length, and the neck ſeven inches. It has, like the Alpine Vulture, a ring of white feathers at the origin of the neck; the head is covered with ſimilar feathers, which are collected into a tuft, under which can be perceived the perforations of the ears; the neck is entirely deſtitute of plumage; the eyes are level with the head, with large eye-lids, which are moveable, and furniſhed with laſhes; the iris is of a beautiful orange colour; the bill long and hooked, black at its origin and termination, and bluiſh in the middle. The bird is alſo diſtinguiſhed by a re-entrant craw, or a large cavity above the ſtomach, which cavity is covered with hairs, pointing to its centre, and occupying the place of the craw; it is neither prominent nor pendulous, as the Alpine Vulture. The ſkin, which appears naked on the neck, round the eyes, ears, &c. is of a brown grey, and

and bluiſh; the largeſt feathers of the wing are two feet long, and the quill is an inch in circumference; the nails are blackiſh, but not ſo large or ſo crooked as thoſe of the eagles.

I believe, as the Members of the Academy of Sciences have ſaid, that the Fulvous Vulture is really the Great Vulture of Ariſtotle; but, as they give no reaſons in ſupport of their opinion, and as Ariſtotle ſeems to form only two ſpecies, or rather genera of Vultures, the Little one being whiter than the Great, which differs alſo in its form *; it would appear that this genus of the Great Vulture includes more than one ſpecies. For there is only the Alpine Vulture which he particularly mentions, and as he does not deſcribe any of the other Great Vultures, we may reaſonably doubt if the Fulvous Vulture was the ſame with his Great Vulture. The Common Vulture, which is as large, and perhaps more common than the Fulvous Vulture, might be equally taken for this Great Vulture; ſo that we may infer that the Members of the Academy of Sciences were raſh in affirming as certain, a thing ſo equivocal and ſo doubtful, without even mentioning the reaſon or ground of their aſſertion; which may be perhaps true, but which muſt be proved by reflections and compariſons which they have not made. I ſhall endeavour

* There are two ſorts of Vultures, the one ſmaller and whiter, the other larger and more variegated. ARIST. *Hiſt. Anim.*

to

to perform this taſk; and ſhall here ſtate the reaſons which have convinced me that the Fulvous Vulture is really the Great Vulture of the ancients.

I am then of opinion, that the ſpecies of Fulvous Vulture conſiſts of two varieties; the firſt called by naturaliſts the *Tawny Vulture* *, and the ſecond the *Golden Vulture* †. The difference between theſe two birds, of which the firſt is the Fulvous Vulture, is not ſo conſiderable as to conſtitute two diſtinct ſpecies, for both are of the ſame ſize, and nearly of the ſame colour; in both, the tail is comparatively ſhort, and the wings very long ‡, and by this common character they are diſtinguiſhed from the other Vultures. This cloſe reſemblance § has ſtruck ſome naturaliſts even before me, and has induced them to reckon theſe kindred ſpecies. I am even inclined to believe that the bird mentioned by Belon, under the name of *Black Vulture*, is ſtill of the ſame ſpecies with the Golden and Fulvous Vulture; for it is of the ſame bulk, and its

* *Le Vautour Fauve.* Briſſ.

† *Vultur Aureus*, Alberti Magni, Geſnerii, Raii, Willoughbei, Klein. *Vultur Bæticus, ſive Caſtaneus*, Alb. *Le Vautour Doré*, Briſſ.

‡ Briſſon ſtates the tail of his Golden Vulture as of two feet three inches long, and the largeſt wing-feather three feet; which would make me ſuſpect that it is a different bird from the Golden Vulture of the ancients, whoſe tail was ſhorter compared with its wings.

§ Ray and Willoughby.

back

back and wings have the ſame colour as in the Golden Vulture. But if we unite theſe three varieties into one ſpecies, the Fulvous Vulture would be the leaſt unfrequent of all the Great Vultures, and conſequently that which Ariſtotle would principally mention. And what adds probability to the preſumption is, that, according to Belon, this Great Vulture is found in Egypt, Arabia, and the iſlands of the Archipelago, and therefore common in Greece. At any rate I am confident that we may reduce the Great Vultures which appear in Europe into four ſpecies:—the Alpine, the Fulvous, the Vulture properly ſo called, of which we ſhall treat in the following article, and the Creſted Vulture; which differ ſufficiently from each other to conſtitute ſeparate and diſtinct ſpecies.

The Academicians, who diſſected two female Fulvous Vultures, have well obſerved, that the bill is longer, and leſs incurvated than in the Eagles; and that it is black only at the origin and the tip, the middle being of a bluiſh grey; that the ſuperior mandible is marked within with a groove on each ſide; that theſe receive the cutting edges of the inferior mandible when the bill is cloſed; that towards the point of the beak there is a ſmall round protuberance, on the ſides of which are two little perforations through which the ſaliva is diſcharged; that at the baſe of the beak are placed the two noſtrils, each

ſix lines long and two broad, meaſuring downwards, which gives an ample ſpace for the external organs of ſmell; that the tongue is hard and cartilaginous, ſcooped near the tip, and the edges raiſed; that theſe raiſed edges are ſtill harder than the reſt of the tongue, and form a kind of ſaw, the teeth of which are pointed towards the gullet; that the œſophagus dilates below, and forms a large ſac; that this ſac differs from the crop of fowls only becauſe it is interſperſed with the ramifications of a great number of veſſels which are very diſtinct, the membrane being exceedingly white and tranſparent; that the gizzard is neither ſo hard nor ſo thick as in the gallinaceous tribe, and that the fleſhy part is not ſo red as in the gizzards of other birds, but white, like the ventricles; that the inteſtines and the *cæcum* are ſmall as in other rapacious birds; and that the *ovarium* is of the ordinary ſhape and ſize, and the *oviductus* ſomewhat ſerpentine, as in the poultry, and does not form a ſtraight regular canal as in moſt other birds.

If we compare theſe obſervations on the interior ſtructure of Vultures with thoſe which the ſame anatomiſts of the Academy made on Eagles, we ſhall eaſily perceive, that though the Vultures feed upon fleſh, as do the Eagles, they have not the ſame conformation in the organs of digeſtion; and that, in this reſpect, they approach much

much nearer to the poultry and other birds that live upon grain; ſince they have a craw and a ſtomach which, from the thickneſs of its lower part, may be regarded as almoſt a gizzard; ſo that the Vultures ſeem deſtined by their ſtructure, not only to be carnivorous, but granivorous, and even omnivorous.

The CINEREOUS VULTURE.

Le Vautour, ou *Grand Vautour*, Buff.
Vultur Cinereus, Linn.
In Italian, *Avoltorio*.
In Spaniſh, *Buyetre*.
In German, *Geyr*.
In Poliſh, *Sep*.
In Arabic, *Racham*.

THIS bird is thicker and larger than the Common Eagle, but rather ſmaller than the Fulvous Vulture, from which it is not difficult to diſtinguiſh it:—1. Its neck is covered with a longer and thicker down, of the ſame colour with that of the feathers on the back; 2. It has a ſort of white collar, which riſes on both ſides of the head, and extends in two branches to the bottom of the neck, bordering on each ſide a pretty broad black ſpace, under which is a narrow white ring; 3. Its feet are covered with brown feathers, while, in the Fulvous Vulture, they are yellowiſh or whitiſh; and, 4. The toes are yellow; whereas in the Fulvous Vulture they are brown, or of an aſh colour.

The HARE VULTURE.

Le Vautour à Aigrettes, Buff.
Vultur Criſtatus, Linn.
Vultur Leporarius, Ray, Will. and Klein.

THIS Vulture, though ſmaller than the three firſt, ſtill deſerves to be ranked among the Great Vultures. We cannot deſcribe it better than in the words of Geſner, who is the only naturaliſt that has ſeen many of theſe birds. The Vulture, ſays he, which the Germans call *Haſengeier*, *(Hare Vulture,)* has a black bill, hooked at the point, ugly eyes, a large and ſtrong body, broad wings, a long and ſtraight tail; a blackiſh ruſty plumage, and yellow feet. When at reſt, whether on the ground or perched, it erects the feathers of the head, which then reſemble two horns, but which are not perceived when it flies. The expanſion of its wings is near ſix feet; it walks well, advancing fifteen inches at each ſtep; it purſues birds of every kind, and preys upon them; it alſo catches hares, rabbits, young foxes, and ſmall fawns, nor does it ſpare even the fiſh. Its ferocity is ſuch, that it cannot be tamed. Sometimes it ſeizes its prey in its flight; at other times, it darts upon

its victims from the top of a tree or elevated cliff; but always upon the wing. It makes much noiſe in its flight. It breeds in the thick and deſert foreſts on the talleſt trees. It eats fleſh, the entrails of living animals, and even carrion; and though extremely voracious, it can bear the want of food for fourteen days. Two of theſe birds were caught in Alſace in the month of January 1513; and in the following year, more were found in a neſt built on a thick lofty oak, at ſome diſtance from the city of Miſen.

All the Great Vultures, including the Alpine, the Fulvous, the Cinereous, and the Hare Vulture, have but few young, and breed only once a-year. Ariſtotle * ſays, that they generally lay only one or two eggs. They build their neſts in places ſo lofty and inacceſſible, that they are ſeldom diſcovered; they muſt be ſought for only on the giddy heights of deſert mountains †. The Vultures prefer the gloomy haunts during the

* "It breeds on inacceſſible rocks, nor is this bird an inhabit-"ant of many places, for it has only one or two young." ARIST. *Hiſt. Anim.*

† In general, Eagles and Vultures which inhabit iſlands and tracts near the ſea, do not build upon trees, but eſtabliſh their abode among frightful precipices, ſo that they cannot be ſeen except from on board of a ſhip. BELON.—Dapper gives the ſame relation, and adds, that a ſtrong ſtake is driven firmly into the earth that covers the ſummit of the rock, and that a man is let down by a long rope fixed to it, and after putting into a baſket the eggs or young which he finds, heis drawn up by his companions. [It is well known that this is practiſed in the weſtern iſlands of Scotland and in the Orknies.]

whole

whole of the fine ſeaſon; but when ſnow and ice begin to cover the ſummits of the mountains, they deſcend into the plains, and ſeek more hoſpitable abodes. Vultures ſeem to dread more than Eagles the influence of cold; they are leſs common in the north, and it would ſeem that they have not penetrated Sweden, or the more diſtant boreal regions; for Linnæus, in the enumeration which he has given of the Swediſh birds, makes no mention of the Vultures: however, in the following article, we ſhall deſcribe a Vulture which we have received from Norway. But they delight in warm climates; and in Egypt *, Arabia, the iſlands of the Archipelago, and other parts of Africa and Aſia, they are numerous. In thoſe countries the natives make great uſe of Vultures' ſkins; the leather is almoſt as thick as that of the kid, and covered with a fine, cloſe, warm down, and they manufacture it into excellent furs †.

It

* When I was in Egypt and in the plains of Arabia Deſerta, I obſerved that the Vultures were frequent and large. BELON.

† The peaſants of Crete, and others who inhabit the mountains in different countries in Egypt and in Arabia Deſerta, contrive to catch the Vultures ſeveral ways; they flay them, and ſell their ſkins to the furriers. . . . Their ſkin is about as thick as that of a kid . . . The furriers can ſeparate the large feathers, and leave the down, which is under theſe, and thus currying the ſkin, they manufacture valuable *peliſſes*; but in France it is generally uſed for making ſtomachers. . . . A perſon who happens to be at Cairo, and view the merchandizes that are expoſed to ſale, will find delicate ſilky fur veſtments made of Vultures ſkins, both black and

It appears to me that the Black Vulture, which Belon ſays is common in Egypt, is one of the ſame ſpecies with the Cinereous Vulture, and that we ought not to ſeparate them, as ſome naturaliſts have done; ſince Belon, who alone has mentioned them, does not diſtinguiſh them, and ſpeaks of the Cinereous and the Black as compoſing the ſpecies of the Great Vulture. In ſhort, it is probable that there are really black ones, ſuch as figured N° 425, and others that are Cinereous, but which we have not ſeen. The Black Vulture and the Black Eagle are both of the common ſpecies of the Vulture or the Eagle. Ariſtotle properly remarked, that the genus of the Great Vulture was various; for without including the Alpine, which removes from the Vultures, and ranges with the Eagles, it is really compoſed of three ſpecies; the Fulvous,

white. . . . . There are many Vultures in the iſland of Cyprus; theſe birds are of the bulk of a ſwan, very like the Eagle, the wings and back being covered with the ſame ſort of feathers; their neck is full of down, ſoft as the fineſt fur, and all the ſkin ſo covered with it, that the iſlanders wear it upon their breaſt, and oppoſite to their ſtomach, to aſſiſt digeſtion. Theſe birds have a tuft of feathers under their neck; their legs are thick and ſtrong. . . . . They feed only on carrion, and gorge themſelves ſo much, that one meal is ſufficient for fifteen days. . . And when thus gorged, they cannot eaſily riſe from the ground; they are then readily ſhot. Sometimes even they are ſo inactive, that they can be caught by dogs, or killed with ſticks or ſtones. *Deſcription de l'Archipel, par* DAPPER.

the

the Cinereous, and the Hare Vultures. The Little, or Aſh-coloured Vulture, on the contrary, forms a ſingle ſpecies only in Europe; and thus the philoſopher had ſtill reaſon to ſay, that the genus of the Great Vulture was more varied.

The ASH-COLOURED VULTURE.

Le Petit Vautour, Buff.

WE have now to conſider the Small Vultures, which differ from thoſe of which we have already treated, not only by their diminutive ſize, but by other peculiar characters. Ariſtotle reckons only one ſpecies, but our nomenclators make three; the Brown Vulture, the Egyptian Vulture, and the White-headed Vulture. The laſt *, which is the ſmalleſt, appears really to be of a different ſpecies from that of the two firſt; for its legs and feet are naked, while in the others they are feathered. This White-headed Vulture is probably the Little White Vulture of the Ancients, which was common in Arabia, Egypt, Greece, Germany, and even as far as Norway, whence it was ſent to us. We may remark, that the head, and the under part of the neck, are naked, and of a reddiſh colour; and that the bird is entirely white, excepting the large feathers of the wings, which are black †.—Theſe characters are full ſufficient to diſcriminate it.

* *Vultur Leucocephalus*, LINN. and BRISS. and the *White Vulture* of RAY. "Its body is ſooty, with rufous ſpots; its head, neck, "and bottom of the tail, white." It is two feet ſix inches long.

† Schwenckfeld ſays, that in Sileſia it is called *Grimmer*; that its tongue is pretty broad; that its ſtomach is thick and wrinkled; and its gall-bladder large.

Of

Of the other ſpecies of the Aſh-coloured Vulture, I am inclined to reject, or rather to ſeparate, the ſecond, which, from Belon's deſcription, is not a Vulture, but a bird of another genus, which he calls the *Egyptian Sacre*. There remains therefore only the Brown Vulture; with regard to which I ſhall obſerve, that I cannot perceive the reaſons which led Briſſon to refer it to the *Aquila Heteropos* of Geſner. On the contrary, it appears to me, that inſtead of reckoning the Heteropede Eagle a Vulture, we ought to eraſe it from the catalogue of birds; for its exiſtence was never proved; no naturaliſt has ſeen it; and Geſner, who is the only one that mentions it, and whom all the others have copied, had only a drawing of it, which he cauſed to be engraved, and from the figure, referred it to the genus of Eagles, and not to that of Vultures; and the epithet of *Heteropede* alludes to the circumſtance that one of the legs was blue, and the other whitiſh brown. But a bird, figured by an unknown perſon, and named afterwards from an inaccurate drawing, and which the difference of colour of the legs is alone ſufficient to render ſuſpicious; a bird which has never been ſeen by thoſe who mention it; can we conſider ſuch as an Eagle or a Vulture? or has it any real exiſtence? It appears then, that to refer it to the Brown Vulture is mere hypotheſis.

FOREIGN BIRDS,

WHICH RESEMBLE THE VULTURES.

I.

THE bird ſent from Africa, and the iſle of Malta, under the name of *Brown Vulture*, mentioned in the preceding article, which is a particular ſpecies or variety of the Vulture tribe, and which is not found in Europe, muſt be conſidered as a native of the climate of Africa, eſpecially of the countries bordering on the Mediterranean.

II.

The bird called by Belon the *Egyptian Sacre**, and which Dr. Shaw mentions by the name of *Achbobba*. This bird appears in numerous flocks on the barren and ſandy tracts near the pyramids of Egypt. It is almoſt always on the ground, and feeds like the Vultures upon every kind of fleſh and carrion. "It is," ſays Belon, "a dirty and a vulgar bird; and whoever will "picture in his imagination a bird with the "bulk of the kite, with a bill intermediate between the raven and a bird of prey, "hooked at the point, and reſembling the ra-

* This is a variety of the Alpine Vulture (*Vultur Percnopterus*, LINN.):—"It is of a rufous aſh-colour, with duſky ſpots; its feet "naked."

"ven

" ven in the legs and feet and in the manner " of walking, will have an idea of this bird, " which is common in Egypt, and occurs fel- " dom in any other part of the world; though " there are ſome in Syria; and I myſelf have " ſeen ſeveral in Caramania." This bird varies in its colours. Belon conceives that it is the *Hierax*, or the *Egyptian Hawk* of Herodotus, which, like the Ibis, was held in veneration by the ancient Egyptians, becauſe both of them deſtroy and eat the ſerpents, and other noxious and diſguſting reptiles which infeſt Egypt. " Near Cairo," (ſays Dr. Shaw, vol. ii. p. 449.) " there are ſeveral flocks of the *Ach bobba* *, " the *Percnopterus*, or *Oripelargus* †, which, like " the ravens about London, feed upon the car- " rion and naſtineſs, that is thrown without the " city. The ſame bird likewiſe might be the " *Egyptian Hawk*, which Strabo deſcribes (con- " trary to the uſual qualities of birds of that " claſs) to be of no great fierceneſs." Paul Lucas alſo ſpeaks of this bird. " There are " in Egypt," ſays he, " thoſe Hawks which " were honoured, like the Ibis, with religious

* *Ach bobba*, in the Turkiſh language, ſignifies *White father*; a name given it partly out of the reverence they have for it, partly from the colour of its plumage: though, in the other reſpect, it differs little from the *Stork*, being black in ſeveral places. It is as big as a large capon, and exactly like the figure which GESNER, lib. iii. *De Avib.* p. 176, hath given us of it.

† Vid. GESN. ut ſupra. ARIST. *Hiſt. Anim.* lib. ix. cap. 32. PLIN. lib. x. cap. 3.

" adora-

" adoration. It is a bird of prey of the bulk " of a raven, the head reſembling that of the " Vulture, and the feathers thoſe of the Fal- " con. The prieſts of this country conceal " great myſteries under the ſymbol of this bird. " They carve the figure on their obeliſks and " the walls of their temples, to repreſent the " ſun. The vivacity of its eyes, which it di- " rects conſtantly to that great luminary, the " rapidity of its flight, its longevity, &c. ſeem " proper to mark the nature of the ſtar of the " day," &c. But this bird, which we ſee is but imperfectly deſcribed, is perhaps the ſame with the Carrion Vulture, of which we ſhall treat in Art. IV.

III.

Vultur Papa, Linn.
Vultur Monachus, Klein.
Rex Vulturum, Briſſ.
Coxcacoauhtli, Ray.
Queen of the Aurœ, Will.
King of the Vultures, Edw. Alb. & Lath.

The bird of South America which the European ſettlers have called the *King of the Vultures*, and which is indeed the moſt beautiful of the genus. Briſſon deſcribes it fully and accurately from a ſpecimen in the Royal cabinet; and Edwards, who ſaw ſeveral of the birds in London, has given an excellent drawing of it, and a correct deſcription. We ſhall here collect the remarks of theſe authors, and thoſe of their predeceſſors, and add the obſervations which we have our-

N°. 6

THE KING OF VULTURES.

ſelves made relating to the ſtructure and nature of this bird. It is undoubtedly a Vulture; for its head and neck are naked, which is the moſt diſcriminating character of the genus. But it is not large, the extreme length of its body not exceeding two feet two or three inches; it is not thicker than the female turkey; its wings are ſhorter in proportion to the other Vultures; its bill is thick and ſhort, and begins its curvature only at the point; in ſome the bill is entirely red; in others only red at the extremity, and black in the middle; the cere is of an orange-colour, broad, and ſtretching from each ſide to the crown of the head; in the cere are placed the noſtrils, of an oblong ſhape, and between which the ſkin projects like a looſe jagged comb, falling indifferently on either ſide, according as the bird moves its head; the eyes are ſurrounded by a red ſkin, and the iris has the colour and luſtre of pearls; the head and neck are naked, the crown covered with a fleſh-coloured ſkin, which is of a lively red behind, and darker before; below the hind part of the head riſes a ſmall tuft of down, from which there extends, on each ſide under the throat, a wrinkled ſkin of a browniſh colour, and mixed with blue and red near its termination; this ſkin is marked with ſmall lines of black down. The cheeks, or ſides of the head, are covered with a black down; and between the bill and the eyes, behind the inſertion of the mandibles, there

there is a brown purple ſpot; on the upper part of the arch of the neck there is on each ſide a ſmall longitudinal line of black down, and the ſpace included between theſe two lines is of a dirty yellow; the ſides of the arch of the neck are of a red colour, which, as it deſcends, paſſes by inſenſible ſhades into yellow; under the naked part of the neck is a collar or ruff compoſed of pretty long ſoft feathers of a deep aſh-colour; this collar, which entirely encircles the neck, and deſcends upon the breaſt, is ſo broad that, when the bird contracts itſelf, it can conceal the neck and part of the head like a cowl; and this is the reaſon why ſome naturaliſts have given it the name of *Monk*. The feathers on the breaſt, the belly, the thighs, the legs, and the under ſurface of the tail, are white, ſlightly tinged with yellow; thoſe of the rump, and the upper ſurface of the tail, vary, being black in ſome individuals, and in others white: the other feathers of the tail are always black, and ſo are the great feathers of the wings, which are commonly edged with grey. The colour of the feet and nails is not the ſame in all theſe birds; in ſome the feet are of a dull white, or yellowiſh, and the nails blackiſh; in others, the feet and nails are reddiſh; the nails are very ſhort, and but ſlightly curved.

This bird is a native of South America, and not of the Eaſt Indies, as ſome authors have

aſſerted *. The ſpecimen in the king's cabinet was ſent from Cayenne. Navarette, ſpeaking of this bird, ſays, "I ſaw at Acapulco the "King of the *Zopilotes*, or *Vultures*; it is one "of the moſt beautiful of birds," &c. Perry, who dealt in foreign animals at London, informed Mr. Edwards, that this bird comes only from America. Hernandes, in his Hiſtory of New Spain, deſcribes it in a manner that cannot be miſunderſtood. Fernandes, Nieremberg, and Laet †, who have all copied the deſcription of Hernandez, agree with him in ſaying, that this bird is common in Mexico and New Spain; and as, in the extenſive ſearch which I have made in works of travellers, I have not diſcovered

* Albin ſays, that the one which he figured was brought in a Dutch veſſel from the Eaſt Indies. And Edwards tells us, that the perſons who ſhewed theſe birds in London aſſured him, that they came from the Eaſt Indies; notwithſtanding, he ſuppoſed them to be American.

† "In New Spain there are an incredible number and variety of beautiful birds, among which are the *Coſquauhtli*, or *Aura*, as the Mexicans call it. It is of the bigneſs of an Egyptian hen, and its feathers are black upon every part of the body, except at the neck and round the breaſt, where they are of a reddiſh black; the wings are black, and mixed with cinereous, purple, and tawny; the nails are reflected; the bill red at the point; the noſtrils open; the eyes black, the pupils tawny; the eye-lids red; the face blood-coloured, and filled with many wrinkles, which it contracts and cloſes like the turkies, and where there is alſo a little woolly hair like Negroes; the tail is like that of the eagle, black above, and cinereous below." —"There is another bird of the ſame kind, which the Mexicans call *Tzopilotl*." De Laet, *Hiſt. du Nouv. Monde*.

This ſecond bird, called *Tzopilotl*, muſt be a Vulture; for the King of the Vultures is alſo named by the Mexicans *King of the Tzopilotles*.

the ſlighteſt indication of it among the birds of Africa and Aſia, I think we may conclude, that it is peculiar to the Southern regions of the New Continent, and is not found in the Old. It may be objected, that ſince the *Ouroutaran*, or Eagle of Brazil, frequents, as I admit, both the African and American ſhores, the King of the Vultures may enjoy the ſame extenſive range. But this bird is probably unequal to the journey *; for the Eagles in general fly better than the Vultures. It is delicately ſenſible of cold, and therefore could not paſs by the way of the North. I am at leaſt certain, that this bird is confined to its natal region, and haunts the tracts between Brazil and New Spain.

The King Vulture is neither elegant, noble, nor generous; it attacks only weak victims, and feeds upon rats, lizards, ſerpents, and even the excrements of animals and men. Hence it has a diſguſting ſmell, and not even the ſavages can eat its fleſh.

IV.

The bird called *Ouroua*, or *Aura*, by the Indians of Cayenne, *Urubu* by thoſe of Brazil, *Zopilotl* by thoſe of Mexico, and to which the French ſettlers in St. Domingo have applied the

* Fernandez however ſays, that this bird riſes to a great height, holding its wings much extended; and that its flight is ſo vigorous that it withſtands the greateſt winds. One might ſuppoſe that Nieremberg alluded to this circumſtance when he called it *Regina Aurarum*; but *Aura* is not derived from the Latin, it is a contraction for *Ouroua*, the Indian name of the Carrion Vulture.

epithet

epithet of *Merchant*, alſo muſt be referred to the genus of Vultures; for it has the ſame inſtinctive diſpoſitions, and, like them, its bill is hooked, and its head and neck deſtitute of plumage. It bears alſo ſome reſemblance to the turkey, which has occaſioned its receiving from the Spaniards and Portugueſe the name of *Gallinaço* *. It hardly exceeds the ſize of the wild gooſe; its head appears ſmall, becauſe it, as well as the neck, is covered only with naked ſkin, with ſome ſtraggling black hairs; the ſkin is rough, and variegated with blue, white, and red; the wings, when cloſed, extend beyond the tail, which is alſo of conſiderable length; the bill is of a yellowiſh white, and curved only at the point; the cere extends almoſt to the middle of the bill, and is of a reddiſh yellow; the iris is orange, and the eyelids white; the feathers are brown or blackiſh over the whole body, and reflect a varying colour of dull green and purple; the feet are of a livid colour, and the nails black. This bird has noſtrils ſtill longer in proportion than the other Vultures †;

* *Vultur Aura*, Linn. *Strunt-vogel* ||, Kolb. *Turkey-Buzzard*, Cateſby and Clayton. *Carrion-Vulture*, Sloane, Damp. Brown, Penn. and Lath.

"It is of a duſky grey; the wing-feathers black; and the bill white."

† I have thought it proper to give this ſhort deſcription, becauſe thoſe of other authors do not agree preciſely with one I have ſeen. But as the differences are ſlight, we may preſume that they were owing to the peculiarities of the individual, and conſequently their deſcriptions may be as good as mine.

|| (i. e. *naſty bird.*)

it is accordingly more cowardly, more filthy, and more voracious than any of them, feeding rather upon carrion and filth than upon game. Its flight, however, is lofty and rapid; but it has not courage to purſue its prey, and only grovels among the dead carcaſſes. If it ſometimes ſummons reſolution to make an aſſault, it collects in numerous flocks, and ſurpriſes the helpleſs ſolitary animal while drowned in ſleep or diſarmed by wounds.

The Carrion Vulture is the ſame bird with that which Kolben deſcribes under the name of the *Eagle of the Cape*. It is therefore found both on the continent of Africa and that of South America; and as it is not obſerved in the countries of the North, it muſt have traverſed the ſea between Brazil and Guinea. Hans Sloane, who ſaw many of them in America, ſays, that they fly like kites, and are always lean. Hence it is very poſſible, from their agility and the rapidity of their courſe, that they could perform the diſtant journey acroſs the ocean which ſeparates the two continents. Hernandes informs us, that they feed upon animal carcaſſes, and even human excrements; that they aſſemble on the lofty trees, whence they deſcend in flocks to devour carrion; and he adds, their fleſh has an offenſive ſmell, ranker than that of the raven. Nierembergalſo ſays, that they fly very high and in numerous flocks; that they paſs the night upon trees or elevated rocks, which they leave in the morning, and reſort near the

the inhabited ſpots; that their ſight is very acute, and that they deſcry, from a towering height and an immenſe diſtance, the carcaſſes on which they prey; that they maintain a gloomy ſilence, and never ſcream or ſing, and are heard only by a ſlight murmur, which they ſeldom utter; that they are very common on the plantations in South America, and that their young are white in their infancy, and become brown or blackiſh as they grow old. Marcgrave, in the deſcription which he gives of this bird, ſays, that its feet are whitiſh, its eyes bright, and of a ruby colour; the tongue grooved, and ſerrated on the ſides. Ximenes aſſures us, that theſe birds never fly but in large flocks, and are always very lofty in their courſe; that they all alight together upon the ſame prey, and, without contention, devour it to the bones, and gorge themſelves to ſuch a degree, that they are unable to reſume their flight. Theſe are the ſame birds that Acoſta mentions by the name of *Poullazes*, "which "have," ſays he, "a wonderful agility and a pier- "cing eye, and are very uſeful for cleaning cities, "not ſuffering the leaſt veſtige of carrion or "putrid matter to remain; that they ſpend the "night upon trees and rocks, and reſort to the "towns in the morning, perch upon the top "of the higheſt buildings, whence they deſcry "and watch for their plunder; their young "have a white plumage, which afterwards "changes with age into black."—"I believe," ſays

Deſmarchais, " that theſe birds called *Gallinaches* " by the Portugueſe, and *Marchands* by the " French ſettlers in St. Domingo, are a kind of " turkey *, which, inſtead of living upon grain, " fruits, and herbs, like the others, are accuſ- " tomed to feed upon dead animals and carrion; " they follow the hunters, eſpecially thoſe whoſe " object is only to procure the ſkins; theſe " people neglect the carcaſſes, which would rot " on the ſpot, and infect the air, but for the " aſſiſtance of theſe birds, which no ſooner per- " ceive a flayed body, than they call to each other, " and pour upon it like Vultures, and in an in- " ſtant devour the fleſh, and leave the bones as " clean as if they had been ſcraped with a knife. " The Spaniards, who are ſettled upon the large " iſlands, and upon the continent, as well as the " Portugueſe, who inhabit thoſe tracts where " they traffic in hides, receive great benefit " from theſe birds, by their devouring the " dead bodies and preventing infection; and " therefore they impoſe a fine upon thoſe who " deſtroy them. This protection has extremely " multiplied this diſguſting kind of turkey. It " is found in many parts of Guiana as well as " in Brazil, New Spain, and the large iſlands. " It has the ſmell of carrion, which nothing can

* Though this bird reſembles the turkey by its head, neck, and the bulk of the body, it is by no means of that genus, but of that of the Vulture; to which it is analogous by its inſtincts, habits, and, beſides, by its hooked bill and its talons.

" remove;

" remove; the rump has been torn from it at " the inſtant of its being killed, and the entrails " extracted, but all to no effect; for the fleſh, " which is hard, tough, and ſtringy, ſtill re- " tained an inſupportable odour. "Theſe birds," ſays Kolben, " feed upon dead animals: I my- " ſelf have often ſeen the ſkeletons of cows, " oxen, and wild beaſts, which they had de- " voured. I call theſe veſtiges ſkeletons, and " not without reaſon; ſince the birds detach " with ſuch dexterity the fleſh from the bones " and the ſkin, that what is left is a perfect " ſkeleton, covered ſtill with the ſkin, without " the leaſt derangement of the parts. One could " hardly perceive that the carcaſe is hollow till " he is near it.—They perform it in this way: " They firſt make an opening in the belly of " the animal and tear out the entrails, which " they eat; they then enter the hollow and ſe- " parate the fleſh. The Dutch of the Cape call " theſe Eagles *Stront-vogels*, or *Stront-jagers;* that " is, *dung birds*. It often happens that an ox, " after being unyoked from the plough, and " allowed to return alone to its ſtall, lies down " by the way to reſt itſelf; and if theſe Eagles " obſerve its unguarded poſture, they infallibly " fall upon it and devour it.—When they want " to attack a cow or an ox, they collect to the " number of a hundred or more, and pour at " once upon the unfortunate victim. They " have ſo quick a ſight, that they can diſcern

" their prey at an amazing height, and when " it would eſcape the moſt acute eye; and, when " they perceive the favourable moment, they " deſcend directly upon the animal, which they " watch. Theſe Eagles are rather larger " than wild geeſe, their feathers are partly " black, partly light grey, but the black pre- " dominates; their beak is thick, hooked, and " pointed; their claws large and ſharp."—"This " bird," ſays Cateſby, " weighs four pounds " and a half; the head and part of the neck " is red, bald and fleſhy as in the turkey, beſet " with ſtraggling briſtles; the bill is two inches " and an half long, partly covered with fleſh, " and its tip, which is white, is hooked like " that of the falcon, but it has no whiſkers at " the ſides of the upper mandible; the noſtrils " are large and open, placed before at a remark- " able diſtance from the eyes; the plumage " through the whole of the body has a mixture " of deep purple and green; its legs ſhort and " fleſh-coloured, its toes long as in the domeſtic " cocks, and its nails, which are black, are not " ſo much hooked as thoſe of falcons. They " feed on carrion, and fly continually on the " ſearch; they continue long on the wing, and " riſe and deſcend ſo ſmoothly, that the motion " of their pinions cannot be perceived. A dead " carcaſs attracts numbers of them; and it is " amuſing to ſee their diſputes with each other

" while

" while eating *. An Eagle often preſides at " the banquet, and does not ſuffer them to " approach till he has ſatisfied his appetite. " Theſe birds have a moſt acute ſcent, and ſmell " carrion at a vaſt diſtance, to which they re- " ſort from all quarters, wheeling about and " making a gradual deſcent till they reach the " ground. It is generally ſuppoſed that they " eat no living prey; but I know that ſome of " them have killed lambs, and that they common- " ly feed on ſnakes. They uſually rooſt in num- " bers together on old pines and cypreſſes, " where they continue ſeveral hours in the " morning, their wings being diſplayed †. They " are very tame, and, while at their meals, will " ſuffer a very near approach."

I have thought proper to produce, at conſiderable length, all the facts which tend to throw light on the hiſtory of this bird; for it is in diſtant countries, and eſpecially in deſert regions, that we are to contemplate Nature in her primæval form. Our quadrupeds, and even our birds, perpetually driven from their haunts, loſe in part their original inſtincts, and acquire

* This fact is directly contrary to what Nieremberg, Marcgrave, and Deſmarchais aſſerts, with regard to the ſilence and concord that prevail in their meals.

† This circumſtance ſtill farther ſhews, that this bird belongs to the Vultures; for when theſe ſit they always keep their wings ſpread. Mr. Pennant ſuppoſes that they expoſe their plumage to the air, with the view of getting rid of the rank fœtor.

habits

habits which have a reference to the ſtate of civil ſociety. We muſt ſtudy the diſpoſitions of the Vultures in the ſolitary tracts in America, to diſcover what would be the manners of our own, if they were not moleſted in their retreats, checked in their multiplication, and diſturbed in their operations by our crowded population.—Theſe are their primitive characters.—In every part of the globe, they are voracious, ſlothful, offenſive, and hateful; and, like the wolves, are as noxious during their life, as uſeleſs after their death. [A]

[A] We may add from Mr. Pennant, that the Carrion Vultures are not found in the northern regions of the Ancient Continent; but in the New they are common through its whole extent, from Nova Scotia to Terra del Fuego, and alſo in the Weſt India iſlands, though they are ſaid to be ſmaller there than on the main-land. They ſwarm in the torrid zone; and about Carthagena eſpecially, they haunt inhabited places, ſit in numbers on the roofs of houſes, or walk with ſluggiſh pace along the ſtreets. They watch the female alligator as ſhe hides her eggs in the ſand, and on her retreat, they hurry to the ſpot, and eagerly lay bare the depoſitory, and devour the whole contents.

The CONDUR.

Le Condor, Buff.
Vultur Gryphus, Linn.
Avis ingens Chilenſis *, *Cuntur*, Ray.

IF the power of flying conſtitute the eſſential character of birds, the Condur Vulture muſt be conſidered the largeſt of all. The Oſtrich, the Galeated Caſſowary, and the Hooded Dodo, whoſe wings and feathers are not calculated for flying, and who for this reaſon cannot quit the ground, ought not to be compared with it; they are (if I may be allowed the expreſſion) imperfect birds, a ſort of terreſtrial bipeds, which form an intermediate ſhade between the birds and quadrupeds on the one hand; while the rouſſette and rougette and the bats form a ſimilar ſhade, on the other, between the quadrupeds and the birds. The Condur poſſeſſes, even in a higher degree than the Eagle, all the qualities, all the endowments which Nature has beſtowed on the moſt perfect ſpecies of this claſs of beings. Its wings extend eighteen feet; the body, the bill, and the talons are proportionally large and ſtrong; its courage is equal to its ſtrength, &c.

* The Indians who live near the river Amazons, call it *Ouyrad-Ovaſſou*; that is, the Great *Ouara* or *Aura*.

—We

—We cannot give a better idea of its form, and the proportions of the ſeveral parts of its body, than by an extract from Father Feuillée, the only naturaliſt and traveller who has given a full deſcription of this bird:—"The Condur is "a bird of prey which haunts the valley of "of Ylo in Peru.——I diſcovered one that was "perched upon a great rock: I approached it "within muſket ſhot, and fired, but, as my "piece was only loaded with ſwan-ſhot, the "lead could not pierce its feathers. I perceived "however, from its motions, that it was wound-"ed; for it roſe heavily, and could with dif-"ficulty reach another great rock five hundred "paces diſtant upon the ſea-ſhore. I therefore "charged my piece with a bullet, and hit the "bird under the throat. I then ſaw that I had "ſucceeded, and I ran to ſecure the victim; "but it ſtruggled obſtinately with death; and "reſting upon its back, it repelled my attempts "with its extended talons. I was at a loſs "on what ſide to lay hold of it; and I believe "that if it had not been mortally wounded, I "ſhould have found great difficulty in ſecuring "it. At laſt I dragged it down from the top "of the rock, and, with the aſſiſtance of a "ſailor, I carried it to my tent, to figure it, and "make a coloured drawing.

"The wings of the Condur, which I meaſured "very exactly, extended eleven feet four inches "from the one extremity to the other, and the "quill-

" quill-feathers, which were of a fine ſhining
" black, were two feet two inches long; the thick-
" neſs of the bill was proportioned to that of the
" body, and its length was three inches and ſeven
" lines, the upper part pointed, hooked, and white
" at the end, and all the reſt black; a ſmall ſhort
" down of a tawny colour covered the whole head;
" the eyes were black, and encircled with a brown-
" iſh-red ring; the under-ſurface of its wings,
" and the lower part of its belly as far as the tail,
" were of a light brown; the upper ſurface of
" the ſame colour, but darker; the thighs were
" covered as low as the knee with brown feathers;
" the *os femoris* was ten inches and a line in
" length, the tibia five inches and two lines; the
" foot was compoſed of three anterior pounces and
" one poſterior, the laſt being an inch and half
" long, with a ſingle articulation, terminated by a
" black nail nine lines in length; the middle or
" great anterior pounce was five inches eight
" lines, with three articulations, and the nail
" which terminated it was an inch and nine lines,
" and was black like the others; the inner pounce
" was three inches two lines, with two articula-
" tions, and terminated by a nail of the ſame ſize
" with that of the great pounce; the outer pounce
" was three inches long, with four articulations
" and a nail of an inch; the tibia was covered
" with ſmall black ſcales, and ſo were the pounces,
" only theſe were larger.

" Theſe animals commonly ſettle upon the
" moun-

" mountains, where they procure their ſubſiſt-
" ence; they reſort to the ſhore only in the
" rainy ſeaſons; and feeling the approach of
" cold, they ſeek for ſhelter and warmth in the
" plains. Theſe ſummits, though ſituated under
" the torrid zone, are yet expoſed to a chill
" air; they are covered almoſt the whole year
" with ſnow, but particularly in winter, which
" had ſet in on the 21ſt of this month.

" The ſcanty ſubſiſtence which theſe animals
" can pick up upon the margin of the ſea, ex-
" cept when ſtorms caſt aſhore large fiſh,
" obliges them to make but a ſhort ſtay; they
" appear on the beach generally about evening,
" and there paſs the night, and return to their
" proper haunts in the morning."

Frezier, in his Voyage to the South Sea, ſpeaks of this bird in the following terms:—
" One day we killed a bird of prey, called
" *Condur*, whoſe wings meaſured nine feet; it
" had a brown comb, but not jagged like that
" of the cock; it had in the forepart a red
" gizzard, naked as in the turkey; it is com-
" monly bulky, and can with eaſe carry
" off a lamb. Garcilaſſo ſays, that he found
" ſome in Peru whoſe wings extended ſixteen
" feet."

In fact, it appears that theſe two Condurs, mentioned by Feuillée and Frezier, were young and uncommonly ſmall for the ſpecies; and accordingly all the other travellers repreſent

them of a greater ſize *. Fathers Abbeville and Laët affirm, that the Condur is twice as large as the eagle, and ſo ſtrong that it can pounce and devour a whole ſheep; that it ſpares not even ſtags, and eaſily overthrows a man. There are ſome, ſay Acoſta and Garcilaſſo †, whoſe wings extend fifteen or ſixteen feet; their beak is ſo firm, that they pierce a cow's hide, and two of them are able to kill the animal, and eat the carcaſs. Sometimes they even dare to attack men; but fortunately they are rare, for if they were numerous, they would extirpate the cattle. Deſmarchais relates that theſe birds meaſure eighteen feet acroſs the wings; that their talons are thick, ſtrong, and very hooked; that the American Indians affirm, that they ſeize and tranſport a hind or a young cow as they would do a rabbit; that they are of the ſize of a ſheep,

* On the coaſt of Chili (ſays Strong), not far from the iſland of Mocha, we met with this bird (the Condur) ſitting on a lofty cliff nigh the ſhore. We ſhot it, and the ſailors were aſtoniſhed at its prodigious bulk, for its wings meaſured from tip to tip thirteen feet. The Spaniards ſettled in that country told us, that they dreaded leſt theſe birds ſhould carry off and devour their children. RAY, *Synop. Av.*

† Thoſe who have meaſured the Condurs have found that their wings extend ſixteen feet. Their bill is ſo ſtrong and ſo hard that they eaſily pierce an ox's hide. Two of theſe birds attack a cow or a bull, and ſucceed. They can pounce children of ten or twelve years old, and prey upon them. Their plumage is like that of magpies; they have a comb on the forehead, which is different from that of cocks, not being jagged; their flight is terrible, and when they alight on the ground one is ſtunned with the noiſe of the ruſtle. *Hiſt. Incas.*

and

and that their fleſh is coriaceous, and ſmells like carrion; that their ſight is ſharp, their aſpect ſtern and cruel; that th y ſeldom frequent the foreſts, where they have ſcarcely room to wield their enormous wings; but that they haunt the ſea-ſhore, the ſides of rivers, and the ſavannahs, or natural meadows *.

Ray, and almoſt all the naturaliſts after him, have conſidered the Condur † as a kind of Vulture, becauſe its head and neck are deſtitute of plumage. But there is ſtill reaſon to doubt this concluſion; for it appears that its diſpoſitions have a greater reſemblance to thoſe of the Eagles. It is, ſay the travellers, bold and intrepid; it ventures alone to attack a man, and can, with little difficulty, kill a child ten or twelve years old ‡. It ſtops a whole flock of ſheep,

* "Our ſailors," ſays Spilberg, "caught in the iſland of Loubet, on the coaſt of Peru, two birds of an uncommon ſize, having bills, wings and talons like the Eagles, a neck like the ſheep, and a head like the cock. Indeed their figure was as extraordinary as their bulk."

"There were," ſays de Solis, "in the *menagerie* of the Emperor of Mexico, birds of ſuch an aſtoniſhing ſize and ferocity, that they ſeemed to be monſters. . . . Their voracity was prodigious; and an author mentions, that one of them devoured a ſheep at each meal."

† To this genus the large bird of Chili called *Condur* ſeems to belong; I have been able, from this imperfect deſcription, to come to this concluſion, ſince I cannot doubt that it is a Vulture, being named *Aura*. On account of its naked head, it was at firſt ſuppoſed by the ſailors to be a turkey-cock.—From a ſimilar inadvertency our firſt American coloniſts imagined the Carrion Vulture to be a turkey.

‡ "It has often happened that one of theſe birds has killed and eaten children of ten or twelve years old." SLOANE, *Phil. Tranſ.*

"The

ſheep, and, at its leiſure, ſelects its prize. It carries off roebucks, kills hinds and cows; and alſo catches large fiſh. It therefore lives, like the eagle, upon the ravages which it commits; it feeds upon freſh prey, and not upon dead carcaſſes.—Theſe are rather the habits of the eagle than of the vulture.

It appears to me that this bird, which is ſtill but little known becauſe it is very rare, is not confined to South America; I am confident that it is found both in Africa and Aſia, and perhaps even in Europe. Garcilaſſo properly remarks, that the Condur of Peru and of Chili, is the ſame bird with the *Ruch* or *Roc*, of the eaſtern nations, ſo famous in the Arabian Tales, and which is mentioned by Marco Paolo; and, with equal propriety, he quotes Marco Paolo along with the Arabian Tales; for, in the account of the Venetian, there is almoſt as much exaggeration. " In the iſland of Mada-" gaſcar," ſays he, " there is a wonderful kind " of bird, which they call *Roc*, which bears a

" The famous bird called the *Cuntur* in Peru, which I have ſeen in ſeveral parts among the mountains of Quito, is alſo found, if I am rightly informed, in the low-lands near the river Maragnon. I have ſeen it hovering over a flock of ſheep: it is probable that the preſence of the ſhepherd prevented its attack. It is an opinion univerſally entertained, that this bird can bear off a roebuck, and ſometimes preys on a child. It is ſaid that the Indians decoy it, by preſenting the figure of a child formed of a very viſcous clay, upon which he darts with rapid flight, and impreſſes his claws ſo deeply, that he cannot diſentangle himſelf." *Voyage de la Riviere des Amazons, par M. de la Condamine.*

" reſemblance to the eagle, but is incompa-
" rably bigger . . . . . the wing-feathers being
" ſix fathoms long, and the body large in pro-
" portion. Its ſtrength is ſo aſtoniſhing, that,
" ſingly and unaſſiſted, it ſeizes an elephant,
" hurries the ponderous animal into the air,
" drops it, and kills it by the fall, and after-
" wards feeds upon the carcaſe." It is unne-ceſſary to make any critical reflections; it is ſufficient to oppoſe facts of greater veracity, ſuch as we have already related, and what we ſhall ſtill produce. It appears to me that the bird mentioned almoſt as large as an Oſtrich in the Hiſtory of the Voyage to the Southern continent *, which the Preſident de Broſſes has digeſted with as much judgment as care, muſt be the ſame with the Condur of the Americans, and the Roc of the Orientals. Moreover, I am of opinion, that the bird of prey found in the vicinity of Tarnaſar †, a city in the Eaſt Indies,

* " From the boughs of a tree which produces the fruits called *Monkey's bread*, were ſuſpended neſts that reſembled large oval hampers, open below, and looſely interwoven with branches. I had not the ſatisfaction to ſee the bird to which theſe belonged; but the people in the neighbourhood aſſured me, that its figure was much like that of the kind of eagle which they call *Ntann*. To judge of the bulk of theſe birds from that of their neſts, it cannot be *much inferior to that of the Oſtrich*." *Hiſt. des Navigations aux Terres Auſtrales*.

† " In the vicinity of Tarnaſar, a city of India, are many kinds of birds, ſubſiſting chiefly on prey, and much larger than the eagles; for the hilts of ſwords are formed of the upper part of the bill; that part of the bill is fulvous, varied with cœrulean; but the colour of the

Indies, which is much larger than the eagle, and whoſe bill ſerves for the hilt of a ſword, is likewiſe the Condur; as well as the Vulture of Senegal*, which attacks and carries off children; and that the ſavage bird of Lapland †, as large and thick as a ſheep, mentioned by Regnard and Martiniere, and of whoſe neſt Olaus Magnus gives an engraving, is probably the ſame. But not to draw our compariſons from ſuch diſtant countries, to what other ſpecies muſt we refer the *Laemmer Geyer (Lamb-Vulture)* of the Germans ‡? This Vulture, the plunderer of lambs and ſheep, which has been often ſeen at different

the bird is black, with a few ſtraggling feathers of purple." *Lud. Patricius apud Geſnerum.*

* There are in Senegal Vultures as large as eagles, which devour young children when they find them alone. *Voyage de la Maire.*

† There is found alſo in Ruſſian Lapland a wild bird of a pearl grey, as thick and large as a ſheep, having a head like a cat, and eyes glaring and red; the bill of an eagle, and the feet and talons of the ſame. *Voyage des Pays Septentrionaux, par de la Martinere.*

There are ſcarcely fewer birds than quadrupeds in Lapland; the eagles are to be met with in abundance; ſome are ſo prodigiouſly large that, as I have already ſaid, they ſeize the young fawns of the rein-deer, and carry them to their neſts, which they conſtruct on the ſummit of the higheſt trees; and for this reaſon ſome perſon is always ſet to watch theſe. *Regnard, Voyage de Lappon.*

‡ It may be proper to obſerve, that the *Laëmmergeyer* has been ſince diſcovered to be quite a different bird from the Condur. It is the *Vulture-Eagle* of Albin, the *Vultur Barbatus* of Linnæus, and the *Falco Barbatus* of Gmelin: It is the ſame with the *Avoltoio Barbato* of the Italians, the *Alpine Vulture* of Briſſon, and the *Percnopterus Gypaëtos* of Ray and Willoughby. "It is whitiſh "flame-coloured; the back duſky, with a black ſtripe above and

different times in Germany and Switzerland, and which is much larger than the agle, muſt be the Condur. Geſner relates, from the teſtimony of an author of credit (George Fabricius) the following facts. Some peaſants between Mieſen and Briſa, cities in Germany, loſing every day ſome of their cattle, which they in vain ſought for in the foreſts, obſerved a very large neſt reſting on three oaks, conſtructed with ſticks and branches of trees, and as wide as would cover a cart. They found in this neſt three young birds already ſo large, that their wings extended ſeven ells; their legs were as thick as thoſe of a lion, the nails of the ſize of a man's fingers; and in the neſt, were ſeveral ſkins of calves and ſheep. Valmont de Bomare and Salerne have thought, as well as myſelf, that the *Laemmer Geyer* of the Alps muſt be the Condur of Peru. Its ſpread wings, ſays Bomare, extend fourteen feet; it commits dread-

" below the eyes." It inhabits in ſmall flocks the Alpine tracts of Switzerland, and of the country of the Griſons. It neſtles in the holes of inacceſſible rocks. It reſembles the Vulture in its exterior appearance, in its gregarious habits, and in its fondneſs for carrion. It is like the eagle in its head and neck, and in its courage.

To the ſame ſpecies belong two varieties which are found in the mountains of Perſia. The firſt is the *Golden Vulture* of Briſſon and Latham, and the *Cheſnut Vulture* of Willoughby. " It is rufous; " the back black; the head, and the under part of the neck, of a " tawny white; the wings and tail-feathers duſky."—The ſecond is the *Falco Magnus* of Gmelin. " Its cere is cœrulean; its feet, " and the under part of its body, are cheſnut mixed with white; " its tail cinereous."

ful

ful havoc among the goats, the ſheep, the chamoïs, the hares and the marmots. Salerne alſo relates a deciſive fact on this ſubject, which deſerves to be quoted at length. "In 1719, M. Déradin, father-in-law to M. de Lac, ſhot at his caſtle of Mylourdin, in the pariſh of Saint-Martin d'Abat, a bird which weighed eighteen pounds, and whoſe wings meaſured eighteen feet. It flew for ſome days about a pond, and was pierced by two balls under the wing. The upper part of its body was mottled with black, grey, and white; the top of its belly red as ſcarlet; and its feathers were criſped. They ate of it both at the caſtle of Mylourdin and at Châteauneuf-ſur-Loire; the fleſh was found tough and fibrous, and ſmelt of the marſh. I ſaw and examined one of the ſmall feathers of the wings, which was larger than the quill-feather of the ſwan. This ſingular bird ſeemed to be the Condur." In ſhort, the enormous ſize muſt be conſidered as a deciſive character; and though the *Laemmer Geyer* of the Alps differs from the Condur of Peru by the tints of its plumage, we cannot but refer them to the ſame ſpecies, at leaſt till we obtain a more accurate deſcription of both.

It appears from the teſtimonies of travellers, that the Condur of Peru has a plumage marked with black and white, like that of the magpie; and therefore the large bird killed in France at the caſtle of Mylourdin reſembles it both in ſize

and colour. We may therefore conclude, with great probability, that theſe exalted ſort of birds, though very rare, are ſcattered over both continents; and feeding upon every kind of prey, and dreading nothing but the human race, avoid the habitations of men, and confine their haunts to extenſive deſerts, or lofty mountains.

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N°. 7

THE KITE

The KITE and the BUZZARDS.

THESE ignoble, filthy, and ſlothful birds ought to follow the vultures, which they reſemble by their diſpoſitions and habits. The vultures, though deſtitute of every generous quality, claim, by their ſize and ſtrength, a principal rank among the feathered race. The Kites and Buzzards, inferior to theſe in force and magnitude, far exceed them in numbers. They are more troubleſome; they oftener viſit inhabited ſpots, and ſettle nearer the reſidence of men; they build their neſts in places more acceſſible; they ſeldom remain in deſerts, but prefer the fertile hills and dales to the barren mountains. In ſuch ſituations, Nature, aſſiſted by the forming induſtry of man, teems with vegetable and animal productions, and preſents an eaſy and abundant harveſt to the voracious tribe. The Kites and Buzzards are neither bold nor timid; they have a kind of ſtupid ferocity, which gives them an air of cool intrepidity, and ſeems to remove the ſenſe of danger. It is eaſier to approach and to kill them than the eagles or vultures; when detained in captivity, they are leſs capable of inſtruction; and they have always

been proſcribed and eraſed from the catalogue of noble birds, and baniſhed from the ſchool of falconry. In all ages, it has been common to compare a groſs ſhameleſs man to a Kite, and a diſguſting ſtupid woman to a Buzzard.

Though theſe birds reſemble each other in their inſtinct, their ſize *, and the form of their bill and other characters, the Kite is however eaſily diſtinguiſhed, not only from the Buzzards, but from all other birds of prey, by a ſingle prominent feature; its tail is forked; the middle feathers being ſhorter than the reſt, leave a blank which can be perceived at a diſtance, and which has improperly given occaſion to the name of *Forked-tail-Eagle*. Its wings are alſo proportionally longer than thoſe of the Buzzard, and it flies with far greater eaſe. It ſpends its life in the region of the clouds; it ſeldom courts repoſe, and every day it traverſes an immenſe range. But it performs theſe continual circling journies, not with the view to procure its prey; it only indulges its natural, its favourite exerciſe. One cannot but admire the eaſe and the elegance of its motion; its long narrow wings ſeem perfectly fixed; the tail alone appears to direct all its evolutions, and it quivers inceſſantly; it riſes without making an exertion, and deſcends as if it

* The Royal Kite is in ſize and figure like the Buzzard.—In the former, the legs are ſaffron colour, and ſhorter; and in the Buzzard, the part below the knee is covered with pendent ferruginous feathers, SCHWENCKFELD.

were gliding along an inclined plane; it accelerates its courſe, it retards it; it ſtops, hovers ſuſpended in the ſame place for whole hours, nor is obſerved even in the leaſt to quiver its expanded wings.

In our climate, there is only one ſpecies of Kite, which the French call the *Royal Kite* *, becauſe it was formerly an amuſement for princes to hunt this cowardly bird with the falcon or the ſparrow-hawk. It is indeed entertaining to ſee it, though poſſeſſed of all that ought to inſpire courage, and deficient neither in weapons, ſtrength, nor agility, decline the combat, and fly before a ſparrow-hawk ſmaller than itſelf; it conſtantly circles, and riſes, as it were, to conceal itſelf in the clouds, and when overtaken, it ſuffers itſelf to be beaten without reſiſtance, and brought to the ground, not wounded, but vanquiſhed, and rather overcome with fear, than ſubdued by the force of its antagoniſt.

* *Le Milan Royal*, Buff. *Falco Fulvus*, Linn. *The Kite* or *Glead*, Will.

In German it is named *Woike*, *Weiſſer Milan*, *(White Kite,)* and *Hungeyer (Hen-Vulture)*: in Dutch, *Wouwe*: in Poliſh, *Kania*: in Swediſh, *Glada*: in Spaniſh, *Milano*: in Italian, *Milvio*, *Nibbio*, *Poyana*. The antient Greeks called it Ἰκτῖνος, a word which is alſo employed to denote a ſort of hare. (Buffon ſuppoſes, probably from an overſight, the term to be Ἰκτὶς, which ſignifies a polecat, and imagines that it was applied to the Kites, becauſe poultry is the common prey of both.) The Romans named it *Milvius*, i. e. *Mollis Avis*, indolent bird. The Swediſh, *Glada*, and the Old Engliſh name *Gleade*, refer to its gliding motion.

Though

Though the Kite ſcarcely weighs two pounds and an half, and meaſures only ſixteen or ſeventeen inches from the point of the bill to the toes, its wings extend near five feet; the cere, the iris, and the feet are yellow; the bill is of a horn colour, blackiſh towards the point, and the nails are black; its ſight is as keen as its flight is rapid; ſometimes it ſoars ſo high in the air, as to be beyond the reach of our view, and yet at this immenſe diſtance, it diſtinctly perceives its food, and deſcends upon whatever it can devour or ravage without reſiſtance; its attacks are confined to the ſmalleſt animals and the feebleſt birds; it is particularly fond of young chickens, but the fury of the mother is alone ſufficient to repel the robber. "Kites," one of my friends writes me*, "are exceedingly "cowardly animals. I have ſeen two of them "chaſe a bird of prey together to ſhare the "ſpoils, and yet not ſucceed. The ravens in-"ſult them, and drive them away. They are "as voracious as they are daſtardly; I have ſeen "them pick up, on the ſurface of the water, "ſmall dead and half rotten fiſh; I have ob-"ſerved ſome carry a large viper in their claws; "others feed upon the carcaſſes of horſes and "oxen. I have ſeen ſome alight upon tripes, "which women were waſhing by the ſide of "a rivulet, and ſnatch it almoſt in their preſence.

* Mr. Hebert, to whom I am indebted for ſeveral important facts with regard to the hiſtory of Birds.

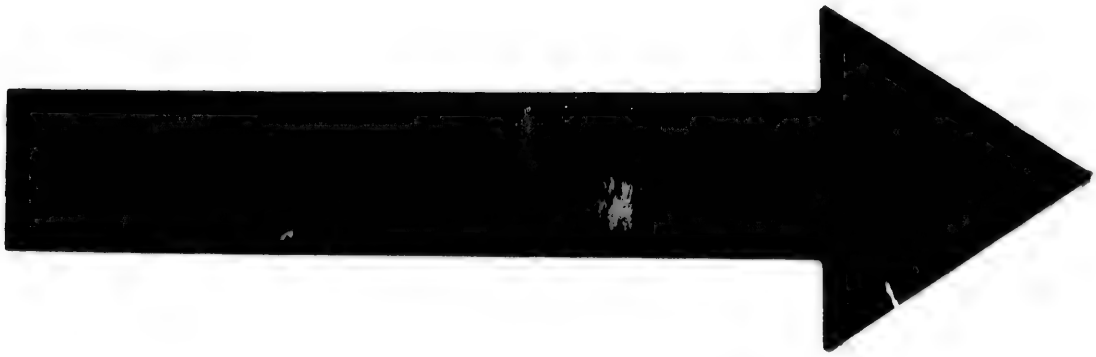
" I once offered a young Kite, which the chil-
" dren were breeding in the houſe where I
" lived, a pretty large young pigeon, and it
" ſwallowed it entire with the feathers."

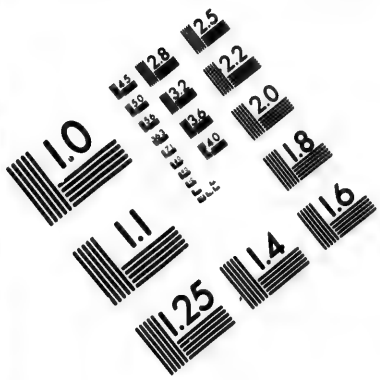
This ſort of Kite is common in France, eſpecially in the provinces of Franche-Comté, Dauphine, Bugey, Auvergne, and all the others which are in the vicinity of mountains. It is not a bird of paſſage, for it conſtructs its neſt in theſe countries, and breeds in the hollow of rocks. It appears even that they neſtle in England, and remain there during the whole year *. The female lays two or three eggs, which are whitiſh, with pale yellow ſpots, and like thoſe of all the carnivorous birds, are rounder than hen's eggs. Some authors have ſaid that they build their neſts in the foreſts, upon old oaks or firs. Without venturing abſolutely to deny the fact, we can affirm that they are commonly found in the holes of rocks.

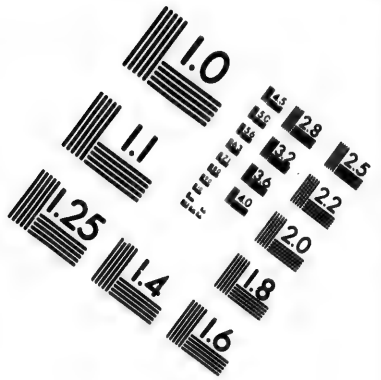
This ſpecies ſeems to be ſcattered through the whole extent of the ancient continent, from Sweden to Senegal †; but I am uncertain if it be

* Some have ſuppoſed theſe to be birds of paſſage; but in England they certainly continue the whole year. *Britiſh Zoology.*

† It appears that the Kite is found in the north; ſince Linnæus includes it in his catalogue of the Swediſh birds, deſcribing it as *a falcon with a yellow cere, forked tail, ferruginous body, and whitiſh coloured head.* Travellers alſo tell us, that it occurs in the hotteſt parts of Africa. In Guinea, ſays Boſman, the Kites not only plunder hens, from which circumſtance they have their name, but whatever







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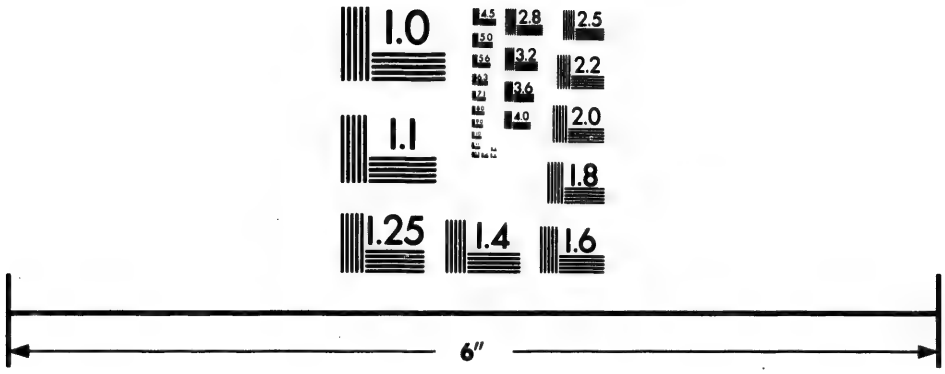

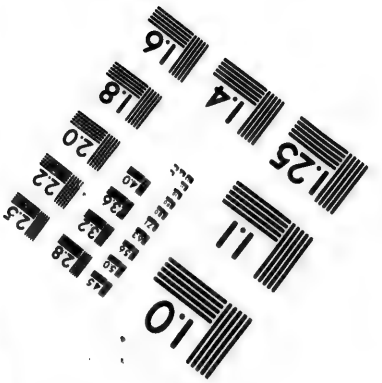

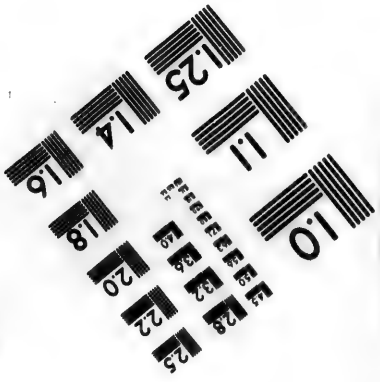

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be alſo found in the new; for no mention is made of it in the accounts that are given of America. There is indeed a bird, which is ſaid to be a native of Peru, and appears in Carolina only in ſummer, which in ſome reſpects reſembles the Kite, and has like it a forked tail. Cateſby gives a deſcription and figure of it under the name of *Swallow-tailed-Falcon*, and Briſſon terms it the *Carolina Kite* [A]. I am inclined to believe that it is a ſpecies related to that of our Kite, and occupies its place in the new continent.

But there is another ſpecies ſtill nearer related, and which appears in our latitudes as a bird of paſſage; it is called the *Black Kite*. Ariſtotle diſtinguiſhes this from the preceding, which he

whatever they can diſcover and ſeize, whether game or fiſh; and their audacity is ſo great, that they ſnatch the fiſh from the negro girls, which they carry to market, or call in the ſtreets. *Voyage to Guinea.*

Near the deſert bordering Senegal, ſays another traveller, there is a ſort of Kite.—Every thing ſuits its greedy appetite; it is not intimidated by fire-arms. Fleſh, whether raw or dreſſed, tempts it ſo ſtrongly, that it ſeizes the morſels as the ſailors convey them to their mouth. *Hiſt. Gen. des Voyages par M. Abbé Prevoſt.*

[A] The *Swallow-tailed-Falcon* is the *Falco Furcatus* of Linnæus, the *Great Peruvian Swallow* of Feuillé, and the *forked-tailed Peruvian Falcon* of Klein. The ſpecific character:—"The cere is "dull coloured, the feet yelloviſh, the body duſky above and "whitiſh below, its tail very long and forked." It inhabits Carolina and Peru, lives upon inſects and ſerpents, and is migratory. It is rather ſmaller than the Kite, but of the ſame length. The *irides* are red, the head and neck ſnowy, the back duſky or black, ſhining with purple or green.

names

names ſimply *Kite*, and gives it the epithet of Ætolian, becauſe, in his time, it was probably moſt common in Ætolia *. Belon alſo mentions theſe two Kites; but he is miſtaken when he ſays that the firſt, which is the Royal Kite, is blacker than the ſecond, which he notwithſtanding calls *Black Kite*. Perhaps it is an error of the preſs, for it is certain that the Royal Eagle is not ſo black as the other. No naturaliſt, ancient or modern, has attended to the moſt obvious diſtinction between theſe two birds, which is founded in the difference of the figure of their tails. But in ſize, their ſhape and their inſtinctive habits, they bear a cloſe reſemblance, and muſt therefore be conſidered as kindred ſpecies †.

Aldrovandus ſays, that the Hollanders call this Kite *Kukenduff*, and that though ſmaller than the Royal Eagle, it is ſtronger and more agile. Schwenckfeld affirms on the contrary, that it is weaker and more ſlothful, and that it preys only upon field-mice, graſshoppers, and upon ſmall birds, as they riſe from their neſts.

* Kites have for the moſt part two eggs, ſometimes three; and they hatch as many young. But what is called the Ætolian lays ſometimes four. *Ariſt. Hiſt. An.*

† The *Falco Ater* of Gmelin, the *Schwartzer Milan*, and the *Brauner Mald Geyer* of the Germans, and the *Black Kite* of Sibbald and Latham. "Its cere and feet are yellow, its body duſky-"black above, whitiſh on the head and the under part of the "body, its tail forked." It is ſmaller than the common kite, its tail ſlightly forked, its legs ſlender; its egg is ferruginous, with duſky and black ſpots.

He

He adds, that this ſpecies is very common in Germany; this may be true, but we are certain that in France and England it is much leſs frequent than the Royal Kite. The one is a native, and reſides with us the whole year; the other is a bird of paſſage, which quits our climate in autumn, and migrates to warmer regions. Belon was an eye-witneſs of their paſſage from Europe to Egypt;—before the approach of winter, they traverſe the Black-ſea, marſhalled in numerous lines, and return in the ſame order about the beginning of April: they remain the whole winter in Egypt, and are ſo tame, that they enter the cities, and alight upon the windows of the houſes; their ſight is ſo quick, and their flight ſo ſteady, that they catch in the air the bits of meat that are thrown to them [A].

[A] Mr. Pennant repreſents the Kite as larger than is ſtated by the Count; it weighs forty-four ounces, and is twenty-ſeven inches long. It inhabits England in all ſeaſons.

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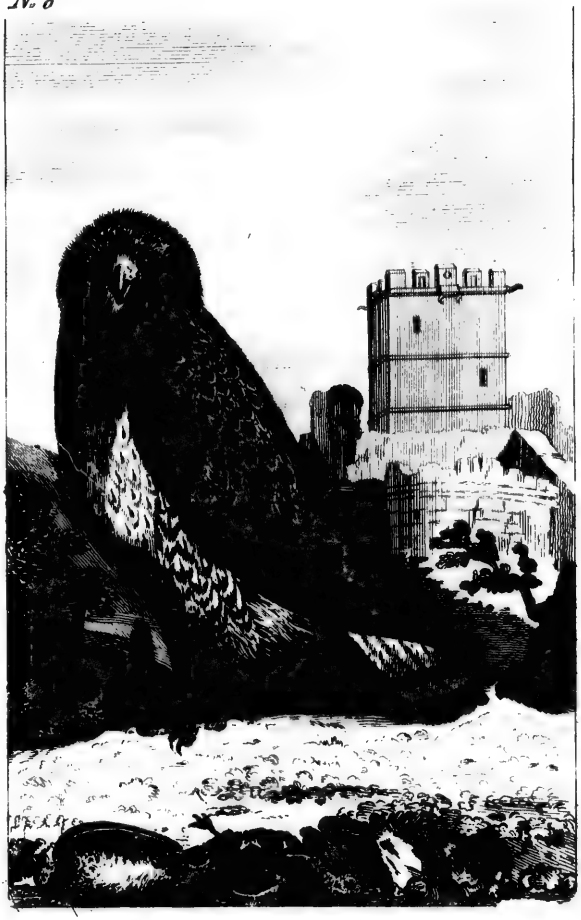

THE COMMON BUZZARD

The BUZZARD*.

La Buſe, Buff.
Falco Buteo, Linn.
Goiran, Hiſt. de Lyons.
Maaſſe Geyer, Gunth.
Pojana Secunda, Zinn.

THE Buzzard is ſo common and ſo well known, that it requires no particular deſcription. Its length is twenty or twenty-one inches; its alar extent four feet and a half; its tail is only eight inches, and the wings, when cloſed, reach a little beyond its point; the iris is of a pale yellow, and almoſt whitiſh; the cere and feet are yellow, and the nails black.

This bird reſides the whole year in our foreſts; it appears ſtupid, whether in the domeſtic ſtate, or in that of liberty; it is ſedentary, and even indolent; it often continues for ſeveral hours together perched upon the ſame tree; its neſt is conſtructed with ſmall branches lined in the inſide with wool, and other ſoft, light materials; it lays two or three eggs, which are whitiſh,

* In Italian, it is called *Buzza* or *Bucciario*. The Latin name is *Buteo*; the Greek Τριορχης, probably from the notion that it had three teſticles τρεις and ορχεις.

ſpotted

ſpotted with yellow. It feeds and tends its young longer than the other birds of prey, moſt of which expel their brood before they are able to provide with eaſe for themſelves. Ray even affirms that if the mother happen to be killed in the time of her tender charge, the male Buzzard patiently diſcharges the truſt.

This bird of rapine does not ſeize its prey on the wing; it ſits on a tree, a buſh, or a hillock, and darts upon the humble game that comes within its reach. It catches young hares and young rabbits, as well as partridges and quails; it commits havoc upon the neſts of moſt birds; and when more generous ſubſiſtence is ſcanty, it ſubſiſts upon frogs, lizards, ſerpents, and graſs-hoppers.

This ſpecies is ſubject to great variety, ſo that if we compare five or ſix common Buzzards together, we ſhall ſcarcely find two that are alike. Some are entirely white; in others, the head only is white; others again are mottled with brown and white. Theſe differences are owing chiefly to the age and ſex, for they are all found in our own climate [A].

[A] The ſpecific character of the Buzzard, *Falco Buteo*, LINN. —"Its cere and feet are yellowiſh, the body duſky, the abdomen "pale, with dirty ſpots, the tail ſtreaked with duſky colours."

The HONEY BUZZARD.

La Bondrée, Buff.
Falco Apivorus, Linn.
Pojana, Zinn.

AS the Honey Buzzard differs but little from the Common Buzzard, they have been diſtinguiſhed by thoſe only who have carefully compared them. They have indeed more analogous than diſcriminating characters, but the difference of external appearance and of natural habits, is ſufficient to conſtitute two ſpecies; which, though allied, are yet ſeparate and independent. The Honey Buzzard is as large as the Buzzard, and weighs near two pounds; its length from the point of the bill to the end of the tail is twenty-two inches; its wings extend four feet two inches, and when cloſed reach to three-fourths of the tail; its bill is rather longer than that of the Buzzard; the cere is yellow, thick, and unequal *; its noſtrils are long and curved; when the bill opens, the mouth appears very large and of a yellow colour; the iris is of a bright yellow; the legs and feet are of the ſame colour,

* Some naturaliſts have ſaid that the bill is black; but we may preſume that this difference is owing to age, ſince it is firſt white; perhaps it becomes ſucceſſively yellow, brown, and black.

and the nails, which are not much hooked, are ſtrong and blackiſh; the head is large and flat, and of a grey cinereous. A full deſcription of this bird occurs in the work of Briſſon and in that of Albin; the laſt author, after deſcribing the external parts of the Honey Buzzard, ſays, that its inteſtines are ſhorter than in the Common Buzzard; and he adds, that there are found in the ſtomach of the Honey Buzzard ſeveral green caterpillars, as alſo ſome common caterpillars and other inſects.

Theſe birds, as well as the Common Buzzards, build their neſts with ſmall ſticks, and line them with wool; their eggs are of an aſh-colour, and marked with ſmall brown ſpots. Sometimes they take poſſeſſion of the neſts of other birds; for they have been found in an old neſt of the Kite. They feed their young with cryſalids, and particularly with thoſe of waſps. The heads and different portions of waſps have been diſcovered in a neſt in which were two young Honey Buzzards. At that tender age, they are covered with a white down, ſpotted with black; the feet are of a pale yellow, and the cere white. In the ſtomach of theſe birds, which is very large, there are alſo found entire frogs and lizards. The female is larger than the male, and both trip and run, without the aſſiſtance of their wings, as faſt as our dunghill cocks.

Though Belon ſays that there is not a young ſhepherd in Limagne in Auvergne, who is not acquainted

acquainted with the Honey Buzzard, and could not catch it with a ſnare baited with frogs, or bird-lime, or even with a nooſe, it is certain that at preſent they are more rare in France than the Common Buzzard. Among twenty Buzzards brought to me at different times in Burgundy, there was not a ſingle Honey Buzzard; nor do I know from what province the ſpecimen came which we have in the king's cabinet. Salerne ſays, that in the country of Orleans, the Common Buzzard is named Honey Buzzard; but theſe may be different birds.

The Honey Buzzard generally ſits upon low trees to ſpy its prey. It catches field mice, frogs, lizards, caterpillars, and other inſects. It ſcarcely flies but from tree to tree, or from buſh to buſh, always low; nor does it ſoar like the Kite, which it reſembles by its inſtincts, but from which it can be readily diſtinguiſhed by its motions and the ſhape of its tail. It is common to place ſnares for the Honey Buzzard, becauſe in winter it is very fat and delicate to eat.

The BIRD SAINT MARTIN.

L'Oiſeau Saint Martin, Buff. and Bel.
Falco Cyaneus, Linn.
Falco Torquatus (Mas.) Briſſ.
Pygargus Accipiter (Mas.) Ray and Will.
Falco Albanella, Gerin.
Lanarius Cinereus, Friſ.
Falco Plumbeus Cauda Teſſelata, Klein.
Hen Harrier, Penn. Edw. Will. Alb. and Lath.

THE modern naturaliſts have given this bird the name of *Lanner Falcon* or *Cinereous Lanner*; but it appears to be of a different genus from either the Falcon or the Lanner. It is rather larger than the common crow, and its body is proportionally more delicate and flexible. Its legs are long and ſlender: whereas thoſe of the Falcon are robuſt and ſhort; and the Lanner is deſcribed by Belon to be ſtill lower on its legs than any Falcon; but in this character it reſembles the White John and the Ring-tail. The only analogy therefore which ſubſiſts between it and the Lanner, is founded in the habit of tearing with its bill all the ſmall animals which it catches, and in not ſwallowing them entire like the other large birds of prey. It ought, ſays Edwards, to be claſſed with the Long-tailed Falcons: in my opinion, it ſhould be ranged

ranged with the Buzzards, or rather placed next the Ring-tail, to which it is ſimilar in its inſtincts, and in many of its properties *.

This bird is pretty common in France, as well as Germany and England; the ſpecimen which we have figured was killed in Burgundy. Friſch has given two plates of this ſame bird, N° 79 and 80, which differ ſo little from each other, that we cannot conſider them, as he does, a different ſpecies; for the varieties which he remarks are ſo ſlight, that they muſt be aſcribed ſolely to age or ſex. Edwards, who alſo preſents an engraving of this bird, ſays, that the ſpecimen from which it was taken was killed near London; and he adds, that it was obſerved to flutter about the foot of ſome old trees, and ſometimes to ſtrike the trunks with its bill and claws, and that the reaſon of the motion could not be perceived till after its death, when the body being opened, there were found in its ſtomach twenty ſmall lizzards, torn or cut into two or three portions.

* Belon does not heſitate to ſay, that it is of the ſame ſpecies with the White John, and at the ſame time he admits, that it is much like the Kite. "There is ſtill another ſpecies of the White "John or St. Martin, called *White-tail*, of the ſame kind with "the aboveſaid; but in colour it is much more like the Royal "Kite, though more ſlender—It reſembles the Royal Kite ſo much, "that we could not perceive the difference, were it not ſmaller "and whiter under the belly, the feathers on the rump being "white both above and below, and hence it is named *White-tail*."

When we compare this bird with what Belon ſays of this ſecond Saint Martin, we cannot doubt of their identity; and beſides the reſemblance in point of ſize, ſhape, and colour, their natural habits of flying low, and ſearching eagerly and inceſſantly for ſmall reptiles, belong not ſo much to the Falcons and other noble birds, as to the Buzzard, the Harpy, and others which partake of the groveling manners of the Kites. This bird, which is well deſcribed and figured by Edwards, is different from what the authors of the Britiſh Zoology name the *Hen Harrier*. Theſe are diſtinct birds, of which the firſt, what we call after Belon the *Saint Martin*, has, as I have ſaid, been mentioned by Friſch and Briſſon under the name of *Lanner-Falcon* or *Cinereous Lanner*; the ſecond, which is the *Subbuteo* of Geſner, and which we term *Soubuſe*, has been named *White-tail-Eagle* by Albin, and *Collared-Falcon* by Briſſon. Beſides, the falconers call this bird Saint Martin, the *Hawk Harpy*. *Harpy* is among them a generic name, which they apply not only to the bird Saint Martin, but to the Ring-tail and the Red Buzzard, of which we ſhall afterwards ſpeak.

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THE RINGTAIL FALCON.

The SOUBUSE.

La Soubuſe, Buff.
Falco Pygargus, Linn.
Falco Torquatus (fem.) Briſſ.
Ring-tail, Penn. Alb. Will. Lath. *&c.*

THIS bird reſembles the Saint Martin in its inſtincts and habits; both fly low to catch field-mice and reptiles; both enter the outer-court, and haunt the places where poultry is kept, to ſeize young pigeons and chickens; both are ignoble birds, which attack only the weak and feeble, and therefore deſerve neither the name of Falcons nor that of Lanners.

The male, as in other rapacious birds, is much ſmaller than the female, and is beſides diſtinguiſhed by the want of a collar, that is of ſmall feathers briſtled round the neck. This difference ſeemed to conſtitute a ſpecific character; but very ſkilful falconers aſſured us, that it was only ſexual; and upon examining more cloſely, we found the ſame proportions between the tail and the wings, the ſame diſtribution of colours, the ſame form of the neck, head, and bill, &c. ſo that we could not oppoſe their opinion. But what occaſioned more difficulty was, that almoſt all the naturaliſts have given the Ring-tail a different male, which is what we have named

Saint Martin; and it was only after numberleſs compariſons that we determined to ſet aſide their authority. We ſhall remark that the Soubuſe is found both in France and in England; that it has long and ſlender legs like the Saint Martin; that it builds its neſt in thick buſhes, and lays three or four reddiſh eggs; and that theſe two birds, with the one which we ſhall mention in the next article by the name of Harpy, form a ſmall genus more nearly allied to the Kites and Buzzards than to the Falcons. [A]

[A] Both this and the preceding article are involved in obſcurity, ariſing from the oppoſite opinion of naturaliſts; ſome maintaining that the former is only the male of the latter, while others conſider them as of different ſpecies. The Saint Martin, or Hen-harrier (*Falco Cyaneus*, LINN.) is thus characteriſed:—"Its cere "is white; its feet tawny; its body of a hoary cœrulean, and a "white arch above the eyes encircling the gullet." The Soubuſe or Ring-tail (*Falco Pygargus*, LINN.):—"Its cere and feet are "yellow; its body cinereous; its lower-belly paliſh, with rufous "oblong ſpots; its orbits white." To throw greater light upon the ſubject we ſhall borrow the account given in the Britiſh Zoology.

"The male, or the Hen-harrier, weighs about twelve ounces; the length is ſeventeen inches; the breadth three feet three inches; the bill is black; cere, irides, and the edges of the eye-lids, yellow; the head, neck, and coverts of the wings, are of a bluiſh grey; the back of the head white, ſpotted with a pale brown; the breaſt, belly, and thighs, are white; the former marked with a few ſmall duſky ſtreaks: the ſcapular feathers are of a deep grey, inclining to duſky; the two middle feathers of the tail are entirely grey; the others only on their exterior webs; the interior being white, marked with ſome duſky bars; the legs are yellow, long, and ſlender.

"The female weighs ſixteen ounces; is twenty inches long; and three feet nine inches broad: on the hind part of the head, round the ears to the chin, is a wreath of ſhort ſtiff feathers of a duſky hue, tipt

tipt with a reddiſh white; on the top of the head and the cheeks the feathers are duſky, bordered with ruſt colour; under each eye is a white ſpot; the back is duſky; the rump white, with oblong yellowiſh ſpots on each ſhaft; the tail is long, and marked with alternate bars of duſky and tawny, of which the duſky bars are the broadeſt; the breaſt and belly are of a yellowiſh brown, with a caſt of red, and marked with oblong duſky ſpots."

The HARPY*.

La Harpaye, Buff.
Circus Rufus, Gmel.
Fiſch-Geyer, Brand-Geyer, Friſch.
Harpy Falcon, Lath.

HARPY is an ancient generic name which has been beſtowed upon the Moor or Marſh Buzzards, and ſome other kindred tribes; ſuch as the Ringtail and the Hen-harrier, which has been termed the *Hawk Harpy*. We have conſidered the name as ſpecific, and have applied it to the bird which falconers at preſent call *Red-harpy*, and which our nomenclators term *Red-buzzard;* and Friſch, improperly, *Middle Lanner Vulture*, as he has alſo improperly termed the Marſh Buzzard, *Great Lanner Vulture*. We have preferred the ſimple name of *Harpy*, becauſe it is certain that this bird is neither a Vulture nor a Buzzard. Its habits are the ſame with thoſe of the two birds which we have treated in the two preceding articles. It catches fiſh like the White John, and draws them alive out of the water. It ſeems, ſays

* It is diſtinguiſhed by "its yellow feet, its rufous body variegated with longitudinal ſpots, its back being duſky, and the feathers of the tail cinereous." The irides are ſaffron-coloured. Its length is twenty inches.

Friſch, to have a more acute ſight than any of the other birds of rapine, its eye-brows being more projected. It is found both in France and in Germany, and loves to haunt the ſides of rivers and pools. In its inſtincts it reſembles the preceding, and therefore we ſhall not be more particular.

The MOOR BUZZARD*.

Le Buſard, Buff.
Falco Æruginoſus, Linn. Gmel. Ray, Will. Klein, & Friſch.
Falco Bæticus, Gerin.
Faux-Perdrieux, Belon.
Il Bozzargo, Cet.
Il Nibbio, Zinn.

THIS bird was formerly called the *Baſtard Partridge*, and ſome falconers term it the *White-headed Harpy*. It is more voracious and leſs ſluggiſh than the Common Buzzard; and this is perhaps the only reaſon that it appears not ſo ſtupid and more vicious. It commits dreadful havoc among the rabbits, and is equally deſtructive to the fiſh as to the game. Inſtead of haunting, like the Common Buzzard, the mountain-foreſts, it lodges only in the buſhes, the hedges, and ruſhes near pools, marſhes, and rivers that abound with fiſh. It builds its neſt at

* The Greek name is Κιρκος, whence the Latin *Circus*. In French it is commonly termed the *Marſh Buſard*; but as in that country there exiſts only one ſpecies of it, Buffon preſerves the ſimple name of *Buſard*. "Its cere is greeniſh; its body grey; its "crown, throat, *axillæ*, and feet, are yellowiſh." It varies extremely in regard to colour: in ſome the body is ferruginous, and the crown alone yellowiſh; in ſome it is duſky ferruginous, and the crown and throat yellowiſh; in a few inſtances the whole bird is of an uniform duſky ferruginous. The egg is whitiſh with dirty ſpots, ſprinkled with ſome duſky ſpots.

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THE MOOR BUZZARD.

a ſmall height above the ſurface of the ground in the buſhes, or even in hillocks covered with thick herbage. It lays three eggs, ſometimes four; and though it appears to be more prolific than the Common Buzzard, and, like it, is a ſtationary bird, a native of France, where it continues the whole year, it is however more rare, or at leaſt more difficult to be found.

Though the Moor Buzzard reſembles the Black Kite in many reſpects, we muſt take care not to confound them; for the Moor Buzzard has, like the Common Buzzard, the Honey Buzzard, &c. a ſhort thick neck; whereas the Kite has a much larger one. And the Moor Buzzard is diſtinguiſhed from the Common Buzzard: firſt, by the places it haunts; ſecondly, by its flight, which is more rapid and ſteady; thirdly, becauſe it never perches upon large trees, but reſts upon the ground, or in the buſhes; fourthly, by the length of its legs, which, like thoſe of the Hen-harrier and Ringtail, are proportionally taller and ſlenderer than thoſe of the other birds of rapine.

The Moor Buzzard prefers water-fowl; as divers, ducks, &c. It catches fiſh alive, and tranſports them in its talons; and when nobler prey fails, it feeds upon reptiles, toads, frogs, and aquatic inſects. Though ſmaller than the Common Buzzard, it procures a more plentiful ſubſiſtence; probably becauſe it is more active and vigorous in its movements, and has a keener

keener appetite: it is alſo more courageous. Belon aſſerts, that he has ſeen it trained to hunt and catch rabbits, partridges, and quails. It flies more heavily than the Kites; and, when it is purſued by the Falcons, it does not riſe into the air, but flies in a horizontal direction. A ſingle Falcon is not able to get the better of it, and it would require two or three to be let looſe at once; for, like the Kite, it meets its antagoniſt, but makes a more vigorous and bold defence. The hobbies and the keſtrils are afraid of it, decline the conflict, and even fly its approach.

FOREIGN BIRDS,

WHICH RESEMBLE THE KITE, THE BUZZARDS, AND THE RINGTAIL.

I.

THE bird which is named by Cateſby the *Swallow-tailed Hawk**, and by Briſſon the *Carolina Kite*. This bird, ſays Cateſby, weighs fourteen pounds; its bill is black and hooked; but it has no whiſkers on the ſides of the upper mandible, as the other Hawks; its eyes are very large and black, and the iris red; the head, the neck, the breaſt, and the belly, are white; the ſhoulders and the back are of a deep purple, but more browniſh below, with a green tint; the wings are long in proportion to the body, and when expanded, meaſure four feet; the tail of a deep purple, mixed with green, and much forked, the longeſt feather on the ſides exceeding by eight inches the ſhorteſt of the middle. Theſe birds continue long on wing,

* *Falco Furcatus*, Linn. *Falco Peruvianus Cauda Furcata*, Klein. *Hirundo Maxima Peruviana*, Feuil.

Its ſpecific character:—"Its cere dull coloured; feet yellowiſh; "the body duſky above, and whitiſh below; the tail forked, and "very long." It is ſmaller than the Kite, but as long. The irides are red; the head and neck ſnowy; the back duſky or black, ſhining with purple or green.

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like the ſwallows, and in their flight catch beetles, flies, and other inſects on the trees and buſhes. It is ſaid that they prey upon lizards and ſerpents, which have induced ſome to call them *Snake-Hawks*. I believe, ſubjoins Cateſby, that they are birds of paſſage, never having ſeen them during the winter.

We ſhall only obſerve, that the bird here mentioned is really not a Hawk, having neither the ſhape nor the inſtincts. In both theſe characters it bears a much cloſer reſemblance to the Kite; and, if we muſt not conſider it as a variety of the European ſort, we may at leaſt conclude that it is far more allied to that bird than to the Hawk.

II.

The bird called by the Indians of Brazil *Caracara*, and of which Marcgrave gives a figure and a very ſhort deſcription; for he contents himſelf with ſaying, that the *Caracara* of Brazil, named *Gavion* by the Portugueſe, is a kind of Sparrow-hawk, or ſmall Eagle *(Niſus)*, of the ſize of a Kite; that its tail meaſures nine inches, its wings fourteen, and reach not ſo far as the end of the tail; the plumage ruſty, and ſpotted with white and yellow points; the tail variegated with white and brown; the head ſimilar to that of the Sparrow-hawk; the bill black, hooked, and moderately large; the feet yellow, the claws like thoſe of the Sparrow-hawk, with nails that are ſemilunar, long, black, and very ſharp;

ſharp; the eyes of a fine yellow. He adds, that this bird is very deſtructive to poultry, and that it admits of a conſiderable variety, ſome individuals having the breaſt and belly white.

III.

The bird found in the tracts contiguous to Hudſon's-bay, which Edwards terms the *Aſh-coloured Buzzard*, and which he deſcribes nearly in the following words: — This bird is of the bulk of a cock, or a middle-ſized hen; it reſembles the Common Buzzard in its ſhape and the diſpoſition of its colours; the bill and the cere are of a bluiſh leaden-colour; the head and the upper part of the neck are covered with white feathers, ſpotted with deep brown in their middle; the breaſt is white, like the head, but it is mottled with larger brown ſpots; the belly and ſides are covered with brown feathers, marked with white round or oval ſpots; the legs are clothed with ſoft white feathers, ſpeckled irregularly with brown; the coverts of the under part of the tail are radiated tranſverſely with black and white; all the upper parts of the neck, of the back, of the wings, and of the tail, are covered with feathers of a brown cinereous colour, deeper in the middle, and lighter near the edges; the coverts of the lower parts of the wings are of a dark brown, with white ſpots; the feathers of the tail are barred above with narrow lines of an obſcure colour, and barred below with white lines; the legs and

feet are cinereous bluiſh; the nails are black, and the legs covered half their length with feathers of a dull colour. Edwards adds, that this bird, which is found about Hudſon's-bay, preys chiefly upon the white grous. After comparing this bird as thus deſcribed with the Common Buzzards, the Ringtails, the Harpies, and the Moor-Buzzards, it appeared to us to differ from them all, by the ſhape of its body, and the ſhortneſs of its legs. It has the port of the Eagle; its legs are ſhort like thoſe of the Falcon, and blue like thoſe of the Lanner. We ought therefore to refer it to the genus of the Falcon or of the Lanner, rather than to that of the Buzzard. But as Edwards is one of the ableſt ornithologiſts, we have relinquiſhed our opinion and adopted his; and for this reaſon we have placed this bird after the Buzzards.

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N.º 11

THE SPARROW-HAWK.

The SPARROW-HAWK*.

L'Epervier, Buff.
Falco Niſus, Linn.
Accipiter, Briſſ.
Accipiter Fringillarius, Ray, Will. and Klein.
Niſus Striatus, Sagittatus, Friſ.
Lo Sparviero, Cett.
Sperver, Gunth.

THOUGH nomenclators have reckoned ſeveral ſpecies of Sparrow-hawks, we are of opinion that they may all be reduced to one. Briſſon mentions four ſpecies, or varieties; viz. the Common Sparrow-hawk, the Spotted Sparrow-hawk, the Small Sparrow-hawk, and the Lark Sparrow-hawk. But we have diſcovered that this Lark Sparrow-hawk is only a female Keſtril. We have alſo found that the Small Sparrow-hawk is but the Tiercel, or male of the Common Sparrow-hawk; ſo that there remains only the Spotted Sparrow-hawk, which is merely an accidental variety of the common ſpecies of the Sparrow-hawk. Klein is the firſt who has mentioned this variety; and he ſays, that it was ſent to him from the country of Marienbourg: we ought therefore to refer the Small Sparrow-

* The Greek epithet is Σπιζιας, *Fringillarius*; and the Latin appellation, *Accipiter Fringillarius*, becauſe it preys upon chaffinches (*fringillæ*) and other ſmall birds.

hawk and the Spotted Sparrow-hawk to the common ſpecies, and exclude the Lark Sparrow-hawk, which is only the female Keſtril.

It appears that the Sorrel Tiercel of the Sparrow-hawk, N° 466, pl. Eul. differs from the Haggard Tiercel, N° 467, pl. Eul. the breaſt and belly of the former being much whiter, and with a much ſmaller mixture of ruſt-colour than in the latter, in which theſe parts are almoſt entirely ruſt, and croſſed with brown bars; in the former the breaſt is marked with ſpots, or with much more irregular bars. The male Sparrow-hawk is called *Taſſel** by the falconers; its back receives more brown as it grows older, and the tranſverſe bars on the breaſt are not very regular till it has undergone the firſt or ſecond moult: the ſame may be obſerved of the female, N° 412, pl. Eul. To give a fuller idea of the changes in the diſtribution of the colours, we ſhall remark that the ſpots on the breaſt and belly of the Sorrel Tiercel are almoſt all detached, and form rather the figure of a heart, or rounded triangle, than a continued and uniform ſucceſſion of a brown colour, ſuch as we perceive in the bars on the breaſt and belly of the Haggard Tiercel, that is of the Tiercel which has had two moultings: the ſame changes happen in the female, in which the brown tranſverſe belts are in the firſt year only unconnected ſpots. It will be found in the following article that the Gos-

* *Mouchet.*

hawk

hawk is ſtill more remarkable for the variations of colour. Nothing more clearly demonſtrates that the characters which our nomenclators have drawn from the diſtribution of colours are inſufficient, than that the ſame bird has the firſt year ſpots or brown longitudinal bars extending downwards; and the ſecond year is marked with tranſverſe belts of the ſame colour. This ſingular change is more ſtriking in the Goshawk, and in the Sparrow-hawks; but it occurs in a certain degree alſo in other ſpecies of birds. In ſhort, all the ſyſtems that are founded upon difference of colour and diſtribution of ſpots, are in the preſent caſe entirely futile.

The Sparrow-hawk continues the whole year in our provinces. The ſpecies is numerous; I have received many in the depth of winter that had been killed in the woods; at that time they were very lean, and weighed only ſix ounces. They are nearly of the ſize of a magpie. The female is much larger than the male; ſhe builds her neſt on the loftieſt trees of the foreſt, and generally lays four or five eggs, which are ſpotted with a yellow reddiſh near the ends. The Sparrow-hawk is docile, and can be eaſily trained to hunt partridges and quails; it alſo catches pigeons that ſtray from their flock, and commits prodigious devaſtation on the chaffinches, and other ſmall birds which troop together in winter. It is probable that the Sparrow-hawk is more numerous than we ſuppoſe; for beſides

thoſe that remain the whole year in our climate, it appears at certain ſeaſons to migrate in immenſe bodies to other countries *; and the ſpecies is found ſcattered in the ancient continent †, from Sweden ‡ to the Cape of Good Hope ||.

* I muſt here tranſcribe a paſſage of conſiderable length from Belon, which proves the migration of theſe birds, and even points out the time when they begin their flight:

"We were at the mouth of the Pontus Euxinus, where begins the ſtrait of the Propontis: we aſcended the higheſt mountain, and found a bird-catcher very ſucceſsfully employed; and, as it was about the end of April, when no birds can build their neſts, we thought it ſtrange that ſo many Kites and Sparrow-hawks ſhould flock thither. The bird-catcher was very aſſiduous, and ſcarcely allowed one to eſcape; he caught more than a dozen in an hour. He was concealed behind a buſh, and in front, about two or three paces diſtant, he had conſtructed a cloſe ſquare airy meaſuring two paces; round it were fixed ſix ſtaffs, three on each ſide, an inch thick, and about a man's height, and on the top of each a notch was cut; a very fine green net was faſtened to theſe notches, and ſpread a man's height from the ground; in the middle of the ſpace was a ſtake of a cubit high, and to the top of which was attached a cord that led to the perſon concealed behind the buſh; to this cord ſeveral birds were faſtened, and fed on grain within the airy. When the bird-catcher perceived the Sparrow-hawk advancing from the ſea, he ſcared theſe birds; and the Sparrow-hawk, whoſe ſight is ſo keen as to deſcry them at the diſtance of half a league, ſhot with expanded wings to ſeize his prey, and in the eagerneſs and rapidity of his motion was entangled in the net. The perſon then took the bird, and ſlipped it into a linen bandage ready ſewed, which confined the wings, thighs, and the tail, and threw it upon the ground, where it could not ſtir. We could not conceive whence the Sparrow-hawks came, for during the two hours that we ſtaid, more than thirty were caught; ſo that in a day one man might catch above a hundred. The Kites and Sparrow-hawks arrived in a chain that extended as far as the eye could reach." BELON, *Hiſt. Nat. des Oiſeaux*.

† The Sparrow-hawks are common in Japan, as well as in every part of the Eaſt Indies. KÆMPFER.

‡ LINNÆUS, *Fauna Suecica*.

|| Kolben.

[A] The

[A] The ſpecific character of the Sparrow-hawk, *Falco Niſus*, LINN. is "That its cere is greeniſh; its feet yellow; the abdomen white, waved with grey, and blackiſh ſtreaks on the tail." There are two varieties belonging to it.

Firſt, The Spotted Sparrow-hawk. Its back is earthy-coloured, ſprinkled with white ſpots; the under part of the body is ſquamous, and more deeply ſtained; the under ſurface of the wings and of the tail is varied with broad white zones, and dirty narrow ſtripes.

Secondly, The White Sparrow-hawk, which has been killed in England.

The GOS-HAWK.

L'Autour, Buff.
Falco Palumbarius, Linn. Gmel. Will. Klein, &c.
Aſtur, Briſſ.
Groſſe Gepfeilter Falck, Friſch.
In Italian, *Aſtore*.
In German, *Habicht*, *Groſſer Habicht*.
In Poliſh, *Jaſtrzabwielki* *.

THE Gos-hawk is a beautiful bird, much larger than the Sparrow-hawk, which it however reſembles by its inſtincts, and by a common character, that, in the birds of rapine, is confined to them and the Butcher-birds: this is, that their wings are ſo ſhort as not to reach near the end of the tail. It reſembles the Sparrow-hawk alſo by another circumſtance;—the firſt feather of the ſhort wing is rounded at the tip, and the fourth feather of the wing is the longeſt of all. Falconers divide theſe birds of ſport into two claſſes; viz. thoſe of falconry, properly ſo called, and thoſe of *hawking* †: and in this ſecond claſs they include not only the Gos-hawk, but the Sparrow-hawk, the Harpies, the Buzzards, &c.

* The Greek epithet is, Αστριας, *Stellaris*; and the Latin appellation, *Accipiter Stellaris*.

† *De l'autourſerie*.

The

N°12

THE GOSHAWK.

The Gos-hawk, before it has ſhed its feathers, that is, in its firſt year, is marked on the breaſt and belly with longitudinal brown ſpots ranged vertically; but after it has had two moultings, theſe diſappear, and their place is occupied by tranſverſe bars, which continue during the reſt of its life. Hence we are apt to be deceived with reſpect to this bird, from the change that happens in the diſpoſition of the colours of the plumage. N° 461, pl. Eul. is a young one; N° 418, an old one.

The Gos-hawk is furniſhed with longer legs than other birds to which it bears a cloſe analogy; as the White Jer-Falcon, which is nearly of the ſame ſize: the male is much ſmaller than the female: both are carried on the hand, and not uſed as decoys; they ſoar not ſo high as thoſe whoſe wings are longer in proportion to their body; they have many habits in common with the Sparrow-hawk, yet they do not dart directly downwards upon their prey, but catch it by a ſide ſhoot. It appears by Belon's account that the Gos-hawk can be enſnared by a contrivance ſimilar to what is practiſed againſt the Sparrow-hawk. A white pigeon, which can be perceived at a great diſtance, is placed between four nets, nine or ten feet high, incloſing a ſpace of nine or ten feet each way round the pigeon, which is in the centre, the Gos-hawk deſcends obliquely, (a proof that he makes only ſide attacks,) puſhes the net to reach his prize, and though

entangled, he devours it, and till ſated makes few attempts to eſcape.

The Gos-hawk is found in the mountains of Franche Compté, of Dauphinè, of Bugey, and even in the foreſts of the province of Burgundy, and in the neighbourhood of Paris; but it is ſtill more common in Germany than in France, and the ſpecies ſeems to penetrate in the countries of the north as far as Sweden, and advance in thoſe of the eaſt and ſouth, to Perſia and Barbary. Thoſe bred in Greece are, according to Belon, the beſt of all for falconry. "They have," ſays he, "a large head, a thick neck, and much "plumage. Thoſe of Armenia," he adds, "have "green eyes; in thoſe of Perſia, they are light-"coloured, hollow and ſunk; in thoſe of Africa, "which are leſs eſteemed, they are at firſt black, "and after moulting, become red." But this character is not peculiar to the Gos-hawks of Africa; thoſe of our own climate have eyes which aſſume a deeper red as they advance in age. There is, in the Gos-hawks of France, a difference or variety even of plumage and colour, which has drawn naturaliſts into a ſort of miſtake. They have applied the name of Moor Buzzard *(Buſard)* to a Gos-hawk, whoſe plumage is light-coloured, and which is more indolent than the Brown Gos-hawk, and not ſo eaſily trained. It is, however, undoubtedly a Gos-hawk, though the falconers reject it. This light-coloured Gos-hawk admits even a ſlight variety,

variety, where the wings are ſpotted with white, from which circumſtance it has been called the *Variegated Moor Buzzard.* But both theſe birds are really Gos-hawks.

I kept for a long time a male and a female of the Brown Gos-hawk: the female was at leaſt a third larger than the male, and its wings, when cloſed, did not reach within ſix inches of the end of the tail: it was more bulky at four months old, which I conceive to be the term of the growth of theſe birds, than a large capon. During the firſt five or ſix weeks, theſe birds were of a grey white; the back, the neck, and the wings, became gradually brown; the belly and the under-part of the throat did not change ſo much, and were generally white or yellowiſh white, with longitudinal brown ſpots the firſt year, and tranſverſe brown bars the following years. The bill is of a dirty blue, and the cere is of a leaden colour; the legs are featherleſs, and the toes of a deep yellow; the nails are blackiſh, and the feathers of the tail, which are brown, are marked with very broad bars of a dull grey colour. During the firſt year, the feathers under the throat are in the male mottled with a reddiſh colour, by which circumſtance it differs from the female; though, if we except the ſize, it cloſely reſembles it in other reſpects.

It was obſerved, that though the male was much ſmaller than the female, it was fiercer and more

more vicious; they were both difficult to tame; they fought often, but rather with their claws than with their bill, which they ſeldom employ but to tear the birds or other ſmall animals that they want to catch; they turn upon their back and defend themſelves with their ſpread talons. Though confined in the ſame cage, they were never perceived to contract the leaſt affection for each other. They continued together a whole ſummer, from the beginning of May to the end of November, when the female in a violent fit of rage, murdered her mate, at nine or ten o'clock in the evening, when the ſilence of night had ſoothed the reſt of the feathered race in profound repoſe. Their diſpoſitions are ſo bloody, that if a Gos-hawk be left with ſeveral Falcons, it butchers them all, one after another. It appears, however, to prefer the common and field mice and ſmall birds, and eagerly devours raw fleſh, but conſtantly declines meat that has been cooked; however, by long faſting, it can be brought to overcome this natural averſion. It plucks the birds very neatly, and tears them into pieces before it feeds; but it ſwallows the mice entire. Its excrements are whitiſh and watery; it often diſgorges the ſkins of the mice rolled together. Its cry is raucous, ending always in ſharp notes, the more diſagreeable the oftener they are repeated; it diſcovers a conſtant uneaſineſs when a perſon approaches; it ſtartles at every thing; ſo that a perſon

perſon cannot paſs near the cage where it is kept, without throwing it into violent agitations, and occaſioning repeated ſcreams. [A]

[A] The ſpecific character of the Gos-hawk (*Falco Palumbarius*, LINN.) is, "That its cere is black, the margin and "feet yellow, the body duſky, the tail feathers marked with pale "bars, the eye-brows white." It is larger than the Common Buzzard, being one foot ten inches long, but it is of a ſlender and more elegant ſhape. It is found in Europe, Aſia, and America.

FOREIGN BIRDS,

THAT ARE RELATED TO THE SPARROW-HAWK AND GOS-HAWK.

I.

THE bird which we have received from Cayenne without any name, and which we have termed *Thick-billed Sparrow-hawk of Cayenne**, (N° 464, pl. Eul.) for it reſembles the Sparrow-hawk more than any other bird of prey; being only ſomewhat larger and rounder ſhaped. Its bill is alſo thicker and longer, but the legs rather ſhorter. The lower part of the throat is of an uniform wine colour; whereas, in the Sparrow-hawk it is white, or whitiſh: but in general the reſemblance is ſo cloſe, that we may conſider it as a kindred ſpecies, and perhaps the difference originates from the influence of climate.

II.

The bird ſent from Cayenne without a name, and to which we have given that of the *Little Gos-Hawk of Cayenne*, becauſe it was conſidered by ſkilful falconers as of the Gos-hawk kind. I muſt indeed own, that it appeared to us to have more reſemblance to the Lanner, as de-

* *Epervier à gros bec de Cayenne.*

ſcribed

ſcribed by Belon, than to the Gos-hawk; for its legs are ſhort and of a blue colour, which are two characters of the Lanner: but perhaps it is neither the one nor the other. We every day commit miſtakes in attempting to refer the birds and quadrupeds of foreign countries to thoſe of our own climate: and ſuch may be the caſe in the preſent inſtance.

III.

The Carolina bird, deſcribed by Cateſby under the name of *Pigeon-hawk*, which is more ſlender than the common Sparrow-hawk. Its iris, cere, and feet yellow; its bill whitiſh at its origin, and blackiſh near the hook; the upper part of the head, neck, back, rump, wings, and tail covered with white feathers, mixed with ſome brown ones; the legs clothed with long white plumage, tinged ſlightly with red, and variegated with longitudinal brown ſpots. The feathers of the tail are brown like thoſe of the wings, but marked with four white tranſverſe bars.

The JER-FALCON.

Le Gerfaut, Buff.

THE Jer-falcon, both in its figure and its diſpoſitions, deſerves to be ranked the firſt of all the birds of falconry. It exceeds them all in point of ſize, being at leaſt equal in bulk to the Gos-hawk. It differs from them by certain general and invariable characters which belong excluſively to thoſe peculiarly calculated for ſport. Theſe noble birds are, the Jer-falcons, the Falcons, the Sacres, the Lanners, the Hobbies, the Merlins, and the Keſtrils; their wings are almoſt as long as their tail; the firſt feather of the wing, called *the* * *hoop*, is nearly as long as that inſerted next it, and about an inch of the extremity is ſharpened into a figure reſembling the blade of a knife. In the Gos-hawks, the Sparrow-hawks, the Kites, and the Buzzards, the tail is longer than the wings, and the firſt feather of the wing is much ſhorter, and is rounded at the end. Beſides, the longeſt feather in theſe is the fourth of the wing, but it is the ſecond in the former. We may add, that the Jer-falcon differs from the Gos-hawk

* *Cerceau.*

alſo

N°13

THE WHITE JERFALCON.

alſo by its bill and feet, which are bluiſh, and by its plumage, which is brown on all the upper part of the body, and white ſpotted with brown on the under, and its tail, which is gray, and barred with duſky lines. (N° 210, Pl. Enl.) This bird is common in Iceland, and it appears that there is a variety in the ſpecies; for we have received from Norway a Jer-falcon, which is found in all the arctic regions, (N° 462, Pl. Enl.) but differs ſomewhat from the other by the ſhades and diſtribution of the colours, and which is more eſteemed by the falconers than that of Iceland, on account of its greater courage, activity, and docility. But there is another variety, (Pl. Enl. N° 446.) which is entirely white, and which, if it were not found alike in all the dreary tracts of the north, might be aſcribed to the influence of the climate. Intelligent falconers inform me, that the young have the ſame colour, which they always retain; we can neither attribute the change therefore to extreme age nor exceſſive cold. It is therefore probable, that there are three diſtinct and permanent breeds of the Jer-falcons; viz. the Iceland Jer-falcon, the Norwegian Jer-falcon, and the White Jer-falcon. Theſe birds are natives of the inhoſpitable arctic regions, both in Europe and in Aſia; they inhabit Ruſſia, Norway, Iceland, and Tartary, but are never found in the warm or even temperate countries. Next to the Eagle it is the moſt formidable, the moſt active, and the

moſt intrepid of all the rapacious birds; and it is alſo the deareſt and the moſt eſteemed for falconry. It is tranſported from Iceland and Ruſſia into France *, Italy, and even into Perſia and Turkey †; nor does the heat of theſe climates appear to diminiſh its ſtrength or blunt its vivacity. It boldly attacks the largeſt of the feathered race; the ſtork, the heron, and the crane, are eaſy victims: it kills hares by darting directly down upon them.—The female, as in the other birds of prey, is much larger and ſtronger than the male, which is called the *Tiercel Jer-Falcon*, and is uſed in falconry only to catch the kite, the heron and the crows. [A]

* We ſhould not ſee the Jer-falcon were it not brought from a foreign country; it is ſaid to come from Ruſſia, where it breeds, and does not inhabit France or Italy, and is a bird of paſſage in Germany.——It may be flown againſt any thing, and is bolder than any other bird of prey. BELON.

† The following paſſage ſeems to refer to the Jer-falcon: We muſt not omit to mention a bird of prey which comes from Muſcovy, whence it is tranſported into Perſia, and which is almoſt as large as an Eagle. Theſe birds are rare, and only the king is permitted to keep them. As it is cuſtomary in Perſia to eſtimate all the preſents without exception that are made to the king, theſe birds are rated at one hundred *tomans* a-piece, which anſwers to one thouſand five hundred crowns; and if any of them die on the road, the ambaſſador brings the head and the wings to his majeſty. It is ſaid that this bird makes its neſt in the ſnow, which it melts to the ground by the heat of its body, ſometimes to the depth of a fathom, &c. CHARDIN.

[A] Linnæus makes two ſpecies of the Jer-falcon: the firſt is *Falco Gyrfalco*, or Brown Jer-falcon; and is perhaps Buffon's Norwegian

Norwegian Jer-falcon: "Its cere is cœrulean, its feet yellowiſh, its body duſky, with cinereous ſtripes below, and the ſides of the tail white." The ſecond ſpecies is the *Falco Candidus*, or White Jer-falcon, and ſeems to be the ſame with that of Buffon. Its character is, "That its cere and feet are of a cœrulean caſt, verging to cinereous, its body white, with duſky ſpots." And to this belongs a variety, which is the Iceland Jer-falcon, in which the body is duſky, with white ſpots on the back and wings, and below it is white ſpotted with black, and the feet are yellow.

The LANNER.

Le Lanier, Buff.
*Falco Laniarius**, Linn. Gmel. Ray, Briſſ. Klein, &c.
Lanneret, Alb.
In German, *Swimer*, or *Schmeyme*.
In Italian, *Laniero*.

THIS bird, which Aldrovandus calls *Laniarius Gallorum*, and which Belon ſays is a native of France, and more uſed by the falconers than any other, is now become ſo rare, that we could not procure a ſpecimen of it. It occurs in none of our cabinets, nor is it found in the ſeries of coloured birds by Edwards, Friſch, and the authors of the Britiſh Zoology. Belon himſelf, though he deſcribes it at conſiderable length, does not give the figure; and it is the ſame with Geſner, Aldrovandus, and the other modern naturaliſts.—Briſſon and Salerne confeſs that they never ſaw it; and the only figure that we have of it is in Albin, whoſe plates are known to be wretchedly executed. It appears then, that the *Lanner*, which is now ſo rare in France, has always been ſo in Germany, England, Switzerland, and Italy, ſince

* The name *Laniarius*, or *Lanner*, is derived from *laniare, to tear*; becauſe the bird mangles cruelly the poultry and other victims of its rapine.

the

the authors of theſe countries mention it upon the authority of Belon. It is however found in Sweden, for Linnæus ranges it among the native birds of that country; but he gives only a ſlight deſcription, and totally omits its hiſtory. All the information that we can obtain is from Belon, and we ſhall therefore tranſcribe his account. "The Lanner, or Lanner-falcon," ſays he, "generally conſtructs its aerie, in France, on "the talleſt trees of the foreſts, or on the moſt "elevated rocks. As its diſpoſitions are more "gentle and its habits more flexible than the "Common Falcons, it is uſed for *every pur-* "*poſe*. It is leſs corpulent than the Genteel "Falcon, and its plumage is more beautiful "than that of the Sacre, eſpecially after moult-"ing; it is alſo ſhorter than the other Falcons. "The falconers prefer the Lanner that has a "large head and blue-*bordered* feet; it flies "both on rivers and on the plains. It ſubſiſts "better than any other Falcon upon coarſe fleſh. "It is eaſily diſtinguiſhed, for its bill and feet "are blue; the feathers on the front mottled "with black and white, with ſpots ſtretching "along the feathers, and not tranſverſe as in "the Falcon. . . . When it ſpreads its wings, "the ſpots ſeen from below appear different "from thoſe of the other birds of prey; for "they are ſcattered and round *like ſmall pieces of* "*money (deniers)*. Its neck is ſhort and thick; "as alſo its bill. The female is called *Lanner*,

" and is much larger than the male, which is " named *Lanneret*; they are both ſimilar in the " colour of their plumage. It remains in the " country the whole year, and no bird is ſo " faithful to its favourite haunt. It is eaſily " trained to catch the Crane: the beſt time for " ſport is after moulting, from the middle of " July to the end of October; but the winter " is an improper ſeaſon." [A]

[A] The ſpecific character of the Lanner, *Falco Laniarius*, LINN. is, that " its cere is yellowiſh, its feet and bill cœrulean, its body marked beneath with black longitudinal ſpots." It inhabits Europe, but is not common in England; it is frequent in Iceland, the Feroe iſlands and Sweden, in the Uralian chain and other parts of Tartary, though not found in the eaſt and north of Siberia. It breeds in low trees: it is ſmaller than the Buzzard.

THE SACRE FALCON.

The SACRE.

Le Sacre, Buff.
Falco Sacer, Gmel. Briſſ. Will. Klein, *&c.*
In German, *Sacker*.
In Italian, *Sacro*.

I HAVE removed this bird from the Falcons, and placed it after the Lanner; though ſome of our nomenclators conſider it only as a variety of the ſpecies of Falcons: becauſe, if we reckon it a mere variety, we ought to refer it to the Lanners rather than to the Falcons. Like the Lanner, the feet and bill of the Sacre are blue; while thoſe of the Falcons are yellow. This character, which appears ſpecific, would incline us to conclude that the Sacre is but a variety of the Lanner; but they differ widely in their ſize and the colour of their plumage, and ſeem rather to be two diſtinct though proximate kinds. It is ſomewhat ſingular that Belon is the only one who has noticed the diſtinguiſhing marks of this bird, and, without his aſſiſtance, naturaliſts would be ſcarcely, if at all, acquainted with the Sacre and the Lanner. Both have become very rare, and it is probable that their inſtincts are the ſame, and conſequently that they are kindred tribes. But as Belon examined theſe birds, and has deſcribed them really diſtinct, we ſhall

tranſcribe his account of the Sacre, as we have already done that of the Lanner:—The plumage of the Sacre is inferior in beauty to that of the other birds of falconry; being of a dirty ferruginous colour, like that of the Kite. It is low, its legs and toes blue, in ſome degree ſimilar to the Lanner. It would be equal to the Falcon in bulk, were it not more compact and rounder ſhaped. It is a bird of intrepid courage, and comparable in ſtrength to the Pilgrim Falcon; it is alſo a bird of paſſage, and it is rare to find a man who can boaſt that he has ever ſeen the place where it breeds. Some falconers are of opinion that it is a native of Tartary and Ruſſia, and towards the Caſpian Sea; that it migrates towards the ſouth, where it lives part of the year; and that it is caught by the falconers who watch its paſſage in the iſlands of the Archipelago, Rhodes, Cyprus, &c. And as the Sacre can be made to ſoar after the Kite, it can alſo be trained for rural ſport, to catch wild geeſe, *buſtards*, *olives*, pheaſants, partridges, and every ſort of game. The *Sacret* is the male, and the *Sacre* the female; the only difference between which conſiſts in ſize.

If we compare this deſcription of the Sacre with what the ſame author has given of the Lanner, we ſhall eaſily perceive, firſt, that theſe two birds are nearer related to each other than to any other ſpecies: ſecondly, that they are birds of paſſage; though Belon ſays that, in his time,

time, the Lanner was a native of France, it is almoſt certain that it is not now found there: thirdly, that theſe two birds ſeem to differ eſſentially from the Falcons, becauſe their body is rounder, the legs ſhorter, the bill and the feet blue, on which account we have ſeparated them.

Some years have elapſed ſince we cauſed a bird of prey, which we were told was a Sacre, to be figured; but the deſcription which was then made has been miſlaid, and we cannot replace it. [A]

[A] The ſpecific character of the Sacre, *Falco-Sacer*, LINN. is, "That its cere and feet are cœrulean; the back, breaſt, and coverts of the wings, mottled with duſky; the feathers of the tail marked with kidney-ſhaped ſpots." It inhabits Europe and Tartary. It is two feet long, and weighs two pounds eight ounces. Its feet are feathered almoſt to the toes.

To the ſame ſpecies belongs a variety, the *American Sacre*, or *Speckled Partridge Hawk*.—"Its cere and feet are cœrulean; its body, and the wing and tail feathers, marked with duſky pale bars; the head, breaſt, and abdomen, ſtained with duſky white longitudinal ſpots." It is a native of Hudſon's-bay and other parts of North America. It preys on the white grous, and will even ſeize them while the fowler is driving them into his nets. It breeds in April or May in unfrequented ſpots; and has, it is ſaid, only two eggs. It is about the bulk of a crow.

The COMMON FALCON.

Le Faucon, Buff.
Falco Communis, Gmel. & Briſſ.
Accipiter Fuſcus, Friſ.
Il Falcone, Cet. uc. Sard.
In German, *Falck*; in Poliſh, *Sokol*; in Spaniſh, *Halkon*.

WHEN we look into the ſyſtems of our nomenclators in natural hiſtory*, we are apt to imagine that there are as many varieties in the Falcon as in the pigeon, the hen, and other domeſtic birds; but this concluſion is far from being

* Briſſon reckons thirteen varieties in this firſt ſpecies, viz. the Sorrel Falcon, Haggard Falcon, the White-headed Falcon, the White Falcon, the Black Falcon, the Spotted Falcon, the Brown Falcon, the Red Falcon, the Red Falcon of India, the Italian Falcon, the Iceland Falcon, and the Sacre. At the ſame time he counts twelve other ſpecies or varieties of the Falcon different from the firſt, viz. the Genteel Falcon, the Pilgrim Falcon, of which the Barbary and Tartary Falcons are varieties; the Collared Falcon, the Rock Falcon, the Mountain Falcon, of which the Cinereous Mountain Falcon is a variety; the Falcon of Hudſon's-bay, the Stellated Falcon, the Creſted Falcon of India, the Falcon of the Antilles, and the Fiſher Falcon of Carolina. Linnæus includes twenty-ſix different ſpecies under the generic appellation of Falcon. It is indeed true that he confounds under that name, as he does every where elſe, all the ſpecies whether contiguous or remote; for we find eagles, ernes, oſpreys, keſtrils, buzzards, &c. ranged with the Falcons. The enumeration made by Briſſon, though too large by a third, is at leaſt conducted with more circumſpection and diſcernment.

[Buffon ſeems to quote the tenth edition of the *Syſtema Naturæ*. The number of ſpecies belonging to the genus *Falco* has been ſince increaſed vaſtly. In the laſt edition publiſhed by Gmelin it amounts to one hundred and twenty.]

THE YOUNG FALCON.

being juſt. Their inſtinctive diſpoſitions have not, in the leaſt, been altered by man; and, though ſubſervient to his pleaſures, and flattering to his vanity, they ſtill retain the native ſenſe of independence, and refuſe to multiply and tranſmit poſterity under his dominion. The original ferocity of theſe birds is indeed broken by careful attention and multiplied reſtraints. They are obliged to purchaſe their exiſtence by performing taſks that are exacted; not a morſel of food is granted but for a ſervice received; they are fixed, pinioned, muffled; they are even excluded from light, and totally denied ſubſiſtence, to render them more dependent, more docile, and to add to their natural vivacity the urgency of want. But they ſerve from neceſſity and from habit, not from attachment; they remain captives, but never become domeſtics; the individual alone feels the weight of ſlavery; the ſpecies preſerves its liberty conſtantly untainted, and never owns the empire of man. It requires the moſt watchful attention to ſurpriſe ſome ſtraggling priſoners; and nothing is more difficult than to ſtudy their œconomy in the ſtate of nature. As they inhabit the moſt rugged precipices on the loftieſt mountains, and ſeldom alight upon the ground, but ſoar in the aerial regions, and fly with unequalled rapidity, few facts can be diſcovered with reſpect to their primitive inſtincts. It has only been obſerved, that they prefer breeding in rocks of a ſouthern expo-

expoſure; that they build their neſts in the moſt inacceſſible *holes* and *caverns*; that they commonly lay four eggs in the latter months of the winter, and ſit but a ſhort time; for the young are adult about the fifteenth of May, and change their colour according to their ſex, their age, and the ſeaſon of moulting; that the females are much larger than the males; that the parents utter piercing, diſagreeable, and almoſt inceſſant ſcreams, when they expel their young; to which violent remedy they have recourſe, like the Eagle, from hard neceſſity, which breaks the bonds of families, and diſſolves the union of every ſociety, as ſoon as the tracts inhabited afford not a ſufficient ſubſiſtence.

The Falcon is perhaps that bird whoſe courage, compared with its ſtrength, is the moſt open and the moſt conſpicuous. It darts directly downwards without deviating from the perpendicular; while the Vulture, and moſt of the other birds of rapine, ſurpriſe their prey by an oblique deſcent. It alights vertically upon the feathered victim entangled in nets, kills it, and devours it upon the ſpot; or, if not too large, it carries the carcaſs aloft into the air. It prefers pheaſants for its prey; and if it diſcovers a flock of them, it drops ſuddenly among them as if it fell from the clouds, becauſe it deſcends from ſuch an amazing height in ſo ſhort a time that its viſit is always unexpected. It frequently attacks the Kite, either to amuſe its courage, or to ſeize

N°16

THE HAGGARD FALCON.

ſeize its prey; but this is rather a contemptuous inſult than an obſtinate combat. It treats its enemy as a coward, purſues it, ſtrikes it with diſdain, and as it meets with but feeble reſiſtance, it allows the Kite to eſcape with its life, being as much diſguſted perhaps with the rankneſs of its carcaſs, as conciliated by the meanneſs of its conduct.

Thoſe who inhabit the vicinity of our great mountains in Dauphiny, Bugey, and Auvergne, and the foot of the Alps, can aſcertain the veracity of all theſe facts. There have been ſent to the King's falconry from Geneva young Falcons that had been caught in the adjoining mountains in April, and which appeared to have acquired their full ſize and vigour before the month of June. When they are young they are called *Sorrel Falcons*, becauſe they are then browner than in the following year (Pl. Enl. N° 470.); and the old Falcons, which are much whiter than the young, are termed *Haggards* (Pl. Enl. N° 421.). The Falcon repreſented in the laſt plate appears to be hardly two years old, and has ſtill a great number of brown ſpots on the breaſt and belly; for in the third year theſe ſpots diminiſh, and the quantity of white on the plumage increaſes (Pl. Enl. N° 430.).

As theſe birds every where ſeek the higheſt rocks, and as moſt iſlands are but groups and points of mountaints, they abound in Rhodes,

Cyprus, Malta, and in the other iſlands of the Mediterranean, and even in the Orkneys and Iceland: but, according to the different climates which they inhabit, they admit of varieties, which it will be proper to mention.

The Falcon which is a native in France is about the ſize of a hen; its extreme length is eighteen inches; its tail is five inches; and its wings when ſpread are three feet and a half, and when cloſed reach to the end of the tail. It is unneceſſary to take notice of the colours of the plumage, becauſe they vary with the age. I ſhall only remark, that the feet are commonly green, and that when the feet and the cere are yellow, they receive the name of *Yellow-billed-Falcons* (Pl. Enl. N° 430.), and are conſidered as inferior to the others, and deemed unfit for the ſport. The Tiercel is employed to catch partridges, magpies, jays, blackbirds, and others of that kind; but the female is engaged in the nobler chace of the hare, the kite, the crane, and other large birds.

It appears that this ſpecies of Falcon, which is very common in France, is found alſo in Germany. Friſch has given a coloured figure of the Sorrel Falcon with yellow feet and cere, by the name of *Enter-ſtoſſer*, or *Schwartz-braune Habicht* (i. e. *Plunderer of ducks*, or *Black-brown Hawk)*; but he is miſtaken in terming it *Brown Gos-hawk (Autour)*; for it differs from that bird by

by its ſize and inſtincts *. It ſeems that theſe occur alſo in Germany, and ſometimes in France; another ſpecies, which is the Rough-footed Falcon with a white head, and which Friſch improperly calls *Vulture*. "This Vulture is completely "clothed with feathers on the feet, in which cir- "cumſtance it differs from all the diurnal rapa- "cious birds that have a hooked bill. The Rock- "eagle is furniſhed with ſimilar feathers, but they "only reach half-way to the feet. The nocturnal "birds of prey, ſuch as the owls, are indeed co- "vered to the nails; yet this is rather a ſort of "down. This *Vulture* chaſes every kind of prey, "though it never grovels among dead carcaſſes." It feeds not upon carrion, becauſe it is not a Vulture but a Falcon; and ſome of our naturaliſts have conſidered it as only a variety of the common ſpecies in France. It bears indeed a cloſe reſemblance, and differs chiefly by the whiteneſs of its head; but the character, that its feet are covered with feathers to the nails, ſeems to be ſpecific, or at leaſt to indicate a conſtant independent variety.

A ſecond variety is the White Falcon, which occurs in Ruſſia, and perhaps in other countries of the north. Some of this ſort are of an uniform white, except at the ends of the great fea-

* This remark of Buffon's ſeems to be groundleſs. The German word *Habicht* is generic, and ſignifies any kind of Hawk. It is probably the ſame with the Saxon *Haſoc*, from which the Engliſh term *Hawk* is derived. The Welſh appellation *Hæbeg* is ſtill more analogous in regard to ſound. T.

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thers of the wings, which are blackiſh; others are alſo entirely white, except a few brown ſpots on the back and wings, and a few brown ſtripes on the tail *. Since this Falcon differs from the common kind in nothing but the whiteneſs of its plumage, we may conſider it as merely a variety occaſioned by the general influence of extreme cold. Yet in Iceland there are Falcons which have the ſame colour with ours, and are only ſomewhat larger, and have their wings and tail longer: theſe then ought not to be ſeparated from the common ſpecies. The ſame remark may be made in regard to the *Genteel Falcon*, which moſt naturaliſts have ſtated as different; in fact, the epithet *Genteel* † is applied when the bird is high bred, and of an elegant ſhape. Accordingly the old writers on falconry reckoned only two kinds of Falcons; the Genteel Falcon, which is bred in our climates, and the Pilgrim or Peregrine Falcon, which is of foreign extraction; and they regarded all the others as varieties of either of theſe. Some Falcons indeed from foreign countries pay us tranſient viſits; they appear moſtly on the ſouthern ſhores, and are caught at Malta; they are for that reaſon called the *Paſſenger Falcons*, and are much blacker than the common kind. It would appear that this Black Falcon enters into Germany as well as France; for it is the ſame with the *Brown Falcon* of Friſch. It even penetrates to

* Briſſon. † *Gentle*, in old Engliſh.

more

more diſtant climates; and Edwards has figured and deſcribed it under the name of the *Black Falcon of Hudſon's-bay.*

To the ſame ſpecies we may alſo refer the Falcon of Tunis or Carthage, mentioned by Belon, "which," he ſays, "is rather ſmaller "than the Pilgrim Falcon, its head thicker and "rounder, and in its bulk and plumage like the "Lanner." The Tartary Falcon ought perhaps to have the ſame arrangement; which is on the contrary ſomewhat larger than the Pilgrim Falcon, and is repreſented by Belon to differ in another circumſtance, that the upper part of its wings is ruſty, and its toes longer.

To give a condenſed view of the facts which we have conſidered in detail: 1. There is in France only one ſpecies of Falcon well known, and which conſtructs its aerie in the mountainous provinces: the ſame is found alſo in Germany, Poland, Sweden, and as far as Iceland, to the north; and in Italy *, Spain, the iſlands in the Mediterranean, and perhaps Egypt †, to the ſouth. 2. The White Falcon is merely a variety of the ſame ſpecies, produced by the influence of a northern climate. 3. The Genteel Falcon is of the ſame ſpecies with the common kind ‡. 4. The Pilgrim or Paſſenger Falcon is of

* Aldrovandus. † Proſper Alpinus.

‡ John of Franchieres, who is one of our oldeſt writers on falconry, and perhaps the beſt, reckons only ſeven ſpecies of Falcons; viz. the Genteel Falcon, the Peregrine Falcon, the Tartarian Falcon,

of a different ſpecies, and perhaps includes ſome varieties; ſuch as the Barbary Falcon, the Tunis Falcon, &c.

Whatever then the ſtatement of our nomenclators may be, there are only two kinds of Falcons in Europe, the one native and the other to be regarded as foreign. If we ſurvey the numerous catalogue which Briſſon has given, we ſhall find, 1. That his Sorrel Falcon is only the young of the common ſpecies: 2. That his Haggard Falcon is an old one of the ſame: 3. That his Falcon with a white head and rough feet, is a permanent variety of the ſame kind: 4. That his White Falcon comprehends two, perhaps three, different ſpecies of birds; the firſt and third of which may derive their colour from the general influence of the arctic climates, but the ſecond, which Briſſon borrows from Friſch, is undoubtedly not a Falcon, and is only a bird of prey common in France, and named the *Harpy*: 5. That the Black Falcon is the true Pilgrim or Paſſenger Falcon, which may be regarded as foreign: 6. That the Spotted Falcon

con, the Jer-falcon, the Sacre, the Lanner, and the Tuniſian Falcon. If we omit the Jer-falcon, the Sacre, and the Lanner, which are not Falcons, there remain only the Genteel Falcon and the Peregrine Falcon, of which the Falcons of Tartary and Tunis are two varieties. This author knew only one ſpecies of Falcon that was a native of France, which he calls the *Genteel Falcon*; and this circumſtance confirms what I have before ſaid, that the Genteel and Common Falcons are really the ſame ſpecies.

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is only the young of the ſame: 7. That the Brown Falcon ought rather to be reckoned a Moor Buzzard: Friſch is the only one who has given a figure of it, and he obſerves that it ſometimes ſeizes wild pigeons in its flight; that it ſoars high; that it is difficult to ſhoot, and yet that it watches the aquatic birds near pools and marſhes:—theſe circumſtances combined would ſhew that it is only a variety of the Moor Buzzards, though its tail is not ſo long as theirs: 8. That his Red Falcon is only a variety of the Common Falcon, which, Belon and the old writers on falconry ſay, frequents the fenny tracts: 9. That his Red Indian Falcon is a foreign bird, of which we ſhall afterwards treat: 10. That his Italian Falcon, the account of which he borrows from Johnſton, may be regarded as a variety of the common ſpecies of Falcon inhabiting the Alps: 11. That his Iceland Falcon is, as we have already remarked, another variety of the Common Falcon, and only ſomewhat larger: 12. That the Sacre is not a variety of the Falcon, but a different ſpecies, which muſt be treated of ſeparately: 13. That his Genteel Falcon is really the Common Falcon, only deſcribed at a different ſeaſon of moulting: 14. That Briſſon's Pilgrim Falcon is the ſame, only aged: 15. That the Barbary Falcon is but a variety of the Foreign or Paſſenger Falcon: 16. And that ſo is the Tartary Falcon: 17. That the Collared Falcon is a bird of a different genus, which we have

termed *Soubuſe* (Ring-tail): 18. That the Rock Falcon is not a Falcon, but is moſt related to the Hobby and Keſtril, and ſhould therefore be conſidered apart: 19. That the Mountain Falcon is only a variety of the Rock Falcon: 20. That the Cinereous Rock Falcon is only a variety of the common ſpecies of Falcon: 21. That the Hudſon's Bay Falcon is of a different ſpecies from the European: 22. That the Stellated Falcon is of a different genus: 23. That the Creſted Falcon of India, the Falcon of the Antilles, the Fiſher Falcon of the Antilles, and the Fiſher Falcon of Carolina, are all foreign birds, of which we ſhall treat in the ſequel.

Thus the Falcons are reduced to two ſpecies; the Common or Genteel Falcon, and the Paſſenger or Pilgrim Falcon.—Let us now conſult our old writers on falconry in regard to the difference of their inſtincts, and in the proper mode of education. The Genteel Falcon drops its feathers in March, and even earlier; the Pilgrim Falcon does not moult until Auguſt. It is broader over the ſhoulders, its eyes are larger and deeper ſunk, its bill thicker, its legs longer and better ſet than in the Genteel Falcon *: thoſe caught in the neſt are called *Ninny Falcons (Faucons-niais)*; when taken too young, they are often noiſy and difficult to train; they ought not therefore to be diſturbed till they are

* Artelouche's Falconry, printed along with the treatiſes of Fouilloux, Franchieres, and Tardif. *Paris* 1614.

conſider-

conſiderably grown; and if they are to be removed from the neſt, they muſt not be handled, but put into another neſt as like the original one as poſſible, and fed with bears fleſh, which is common in the mountains where theſe birds are found, or inſtead of that, they may be nouriſhed with the fleſh of chickens: without theſe precautions, their wings do not grow *, and their legs are eaſily broken or diſlocated. The Sorrel Falcons, which are the young ones, and which have been caught in September, October, and November, are the beſt, and the eaſieſt bred: thoſe which are caught later, in winter or in the following ſpring, and conſequently are nine or ten months old, have taſted too much of freedom to ſubmit patiently to captivity, and their fidelity or obedience can never be relied on; they often deſert their maſter when he leaſt expects it. The Pilgrim Falcons are caught in their paſſage every year in September on the iſlands in the ſea, and the high beaches by the ſhore. They are naturally quick and docile, and very eaſy to train; they may be flown all May and June; for they are late in moulting; but when it begins, they are ſoon ſtripped of their plumage. The Pilgrim Falcons are caught not only on the coaſts of Barbary, but in all the iſlands of the Mediterranean, and particularly

* Catalogue of all the birds of prey employed in falconry, contained in the preceding collection.

that of Candia, which formerly furniſhed our beſt Falcons.

The art of falconry does not belong to Natural Hiſtory; we ſhall not therefore enter into details, but refer to the *Encyclopedie* for information on that ſubject. " A good Falcon," ſays Le Roi, author of the article of *falconry*, " ought to " have a round head, a ſhort thick bill, a very " long neck, ſinewy breaſt, broad long thighs, " ſhort legs, broad feet, ſlender toes, that are " lengthened and ſinewy at the joints, ſtrong " incurvated nails, long wings: the marks of " ſtrength and courage are the ſame in the " Jer-falcon and the Tiercel, which is the male " in all the rapacious birds, and which is ſo " called, becauſe it is one third leſs than the " female. A more certain indication of the " goodneſs of the bird, is its riding *(chevaucher)* " againſt the wind; that is, briſtling againſt it, " and ſitting firm on the hand when expoſed to " it. The plumage of a Falcon ſhould be brown " and of an uniform colour: the proper caſt of " the ſole is ſea-green. Thoſe whoſe ſole is " yellow, and whoſe plumage is ſpotted, are " leſs eſteemed; the black ones are prized: but " whatever be their plumage, the boldeſt are " the beſt. . . . Some Falcons are lazy and cow- " ardly; others are of ſo fiery a temper, that " they can bear no reſtraint; both theſe kinds " are to be rejected," &c.

Forget,

Forget, director of falconry at Verſailles, has been pleaſed to favour me with the following note:

"There is no material difference between the "Falcons of different countries, except in the "ſize; thoſe which come from the north are "commonly larger than thoſe from the moun- "tains, from the Alps, and Pyrenees; the "latter are taken in the neſt, the former are "caught in their paſſage in various regions; "they migrate in October and November, and "return in February and March. . . . The age "of Falcons is marked very preciſely in the ſe- "cond year, that is, at the firſt moulting; but "afterwards it is much more difficult to diſ- "tinguiſh it. It may however be diſcovered till "the third moulting, not only from the changes "of the colour of the plumage, but from the "complexion of the feet and cere."

FOREIGN BIRDS,

WHICH ARE RELATED TO THE JER-FALCON AND FALCONS.

I.

THE Iceland Falcon, which, as we have already ſaid, is a variety of the common ſpecies, and differs only in being rather larger and ſtronger.

II.

The Black Falcon is a bird of paſſage at Malta, in France, and in Germany, which Friſch and Edwards have figured and deſcribed, and which appears to us of a different ſpecies from our Common Falcon. I may obſerve, that the account given by Edwards is accurate, but that Friſch had no foundation for aſſerting that this Falcon is undoubtedly the ſtrongeſt of all the rapacious birds that are of an equal ſize, becauſe its upper mandible terminates in a ſort of ſharp tooth; and that it has larger toes and nails than the other Falcons; for we found upon compariſon, that in regard to the toes and nails, it differed nothing from other Falcons; and in moſt of theſe the upper mandible had a ſimilar termination; ſo that the marks of diſtinction which Friſch aſſigns are falſe or nugatory.

The

The Spotted Falcon, of which Edwards gives a figure and deſcription, and which he tells us came from the ſame country with the Black Falcon, that is, from Hudſon's Bay, appears to be only the Sorrel Falcon, or the young of the ſame ſpecies; it owes its colours therefore to the difference of age, and not to any abſolute diſtinction of kind. We have been aſſured that moſt of the Black Falcons arrive from the ſouth; and yet we have ſeen one which was caught on the coaſt of North America, near the banks of Newfoundland. Edwards tells us, that it is found in the country about Hudſon's Bay. We may therefore conclude that the ſpecies is widely ſcattered, and that it viſits alike the warm, the temperate, and the cold climates.

We may obſerve, that in the bird which we ſaw, the feet were of a diſtinct blue, while in thoſe figured by Friſch and Edwards, they are yellow; yet there is no doubt but the birds are the ſame. We have noticed ſome Oſpreys which had blue feet, and others which had them yellow; this character is therefore not ſo conſtant as generally ſuppoſed. Indeed, like that of the plumage, it varies with the age, or with other circumſtances.

III.

The bird which may be called the *Red Falcon of the Eaſt Indies:* Aldrovandus* deſcribes

* *Falco rubens Indicus.* ALDROV.

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it accurately, and nearly as follows:—In the female, which is a third larger than the male, the upper part of the head is broad, and almoſt flat: the colour of the head, neck, all the back and the upper part of the wings, is aſh, verging on brown; the bill is very thick, though the hook is pretty ſmall; the baſe of the bill is yellow, and the reſt, as far as the hook, is cinereous; the pupil of the eyes is very black, the iris brown, the whole of the breaſt, the higher part of the upper ſurface of the wings, the belly, the rump, and the thighs, are orange inclined to red; above the breaſt and below the chin there is a long cinereous ſpot, and ſeveral ſmall ſpots of the ſame colour on the breaſt; the tail is radiated with ſemicircular bars, alternately brown and aſh-coloured; the legs and feet are yellow, and the nails black. In the male all the parts which are red have a richer colour; thoſe which are cinereous have more brown; the bill is bluer and the feet more yellow. Theſe Falcons, Aldrovandus ſays, were ſent from India to the Grand Duke Ferdinand, who directed them to be delineated.—We may here obſerve, that Tardif*, Albert, and Creſcent, have mentioned the Red Falcon as a ſpecies or variety known in Europe, and inhabiting flat and marſhy countries: but this is not diſtinctly enough deſcribed for us to

* The Red Falcon is often found in flat ſituations, and in marſhes; it is bold, but difficult to controul. TARDIF.

decide,

decide, whether it is the Eaſt Indian kind, which might viſit Europe like the Paſſenger Falcon.

IV.

The bird mentioned by Willoughby under the name of *The cirrated Indian Falcon*, which is larger than the Common Falcon, and nearly of the ſize of the Gos-hawk; which has a creſt divided at the extremity into two parts, that are pendent on the neck. It is black on all the upper parts of the head and body; but on the breaſt and belly, the uniformity of colour is interrupted by lines, which are alternately black and white; the feathers of the tail rayed with lines alternately black and cinereous; but the feet are feathered to the toes; the iris, the cere, and the feet, are yellow; the bill is of a blackiſh blue, and the nails are of a fine black.

In general it appears from the relations of travellers, that the genus of the Falcons is one of the moſt univerſally diſperſed. We have already obſerved that it is found through the whole extent of Europe, in the iſlands of the Mediterranean, and on the ſhores of Barbary. Dr. Shaw, whoſe narrative I find to be almoſt always faithful and accurate, tells us, that in the kingdom of Tunis there are Falcons and Sparrow-hawks in abundance, and that they form one of the principal amuſements of the Arabs, and of the people of eaſier circumſtances. They

They are ſtill more common in the Mogul Empire *, and in Perſia †, where it is ſaid falconry

* "In Mogul the Falcon is flown at does and antelopes." *Voyage de Jean Ovington.*

† The Perſians are expert in training birds for the chace; and they generally inſtruct the Falcons to fly at all ſorts of birds; and for this purpoſe they take cranes and other birds, and putting out their eyes, they ſet them at liberty, and immediately let looſe the Falcon, which eaſily catches them. . . . There are alſo Falcons for the chace of antelopes: they are trained in the following manner: They make the Falcons conſtantly eat off the noſe of ſtuffed antelopes, and ſuffer them to feed no where elſe. After the birds are thus bred, they carry them into the fields, and when they diſcover an antelope, they let looſe two of them, one of which faſtens on the face of the beaſt, and ſtrikes it before with the feet. The antelope ſtops ſhort, and endeavours to ſhake off the Falcon, which claps its wings to keep its hold, and thus retards the flight of the antelope. When after much ſtruggling the Falcon is diſengaged, another ſucceeds; and thus the antelope is continually haraſſed and detained, until the dogs have time to overtake it. Theſe ſports are the more pleaſant as the country is flat and open, and little interrupted by wood. *Relation de Thevenot. . . . Voyage de Jean Ovington.*

The way in which the Perſians breed the Falcons to the chaſe of wild deer is, to ſkin one and ſtuff it with ſtraw, and to faſten the fleſh with which they feed Falcons always on the head of the ſtuffed animal, which is moved along on a four-wheeled vehicle in order to accuſtom the bird. . . . If the beaſt is large, they fly ſeveral birds at it, which teaſe it one after another. . . . They alſo uſe theſe birds in rivers and marſhes, into which they enter like dogs to hunt for the game. . . . As all the military people are ſportſmen, they uſually carry at the pommel of the ſaddle a ſmall tymbal of eight or nine inches in diameter, and by ſtriking it they recal the bird. *Voyage de Chardin.*

Perſia has alſo birds of prey; there are many Falcons, Sparrow-hawks, and Lanners, with which the royal venery is provided, amounting to more than eight hundred. Some are flown at the wild boar, the wild aſs, and the antelope; others are intended againſt cranes, herons, geeſe, and partridges. A great part of theſe birds of ſport are brought from Ruſſia; but the largeſt and beſt come from the mountains which ſtretch towards the ſouth from Schyras unto the Gulph of Perſia. *Dampier's Voyage.*

is

is ſtudied with greater attention than in any other part of the globe *. They occur alſo in Japan, where Kœmpfer ſays they are brought from the northern parts of the iſlands, and are kept rather for oſtentation than utility. Kolben alſo makes mention of the Falcons at the Cape of Good Hope, and Boſman of thoſe on the coaſt of Guinea †. In ſhort, there is no part of the antient continent that is not ſtocked with Falcons; and as they can ſupport cold, and fly with eaſe and rapidity, we need not be ſurpriſed to find them in the new world. Accordingly they have been diſcovered in Greenland ‡, in the mountainous tracts of North and South America ‖, and even in the iſlands of the South Sea §.

* The Perſians, who have much perſeverance, take pleaſure in training a crow in the ſame way as the Sparrow-hawk. *Dampier's Voyage.*

† On the coaſt of Guinea there is another bird which reſembles much the Falcon, and which, though rather larger than a pigeon, is ſo bold and vigorous that it attacks and carries off the largeſt poultry. *William Boſman's Letters.*

‡ There are White and Grey Falcons in Greenland, where they are more numerous than in any other part of the world. Some of theſe birds were ſent as great rarities on account of their excellence to the kings of Denmark, who made preſents of them to other kings and princes their friends or allies, becauſe falconry is not practiſed in Denmark, or in other parts of the north. *Recueil des Voyages du Nord.*

‖ Many Falcons of different ſpecies have been ſent from Mexico and Peru to the grandees of Spain, as they are highly valued. There are alſo herons and eagles of various kinds; and no doubt theſe birds and others ſimilar could more eaſily migrate into thoſe countries than the lions and tigers. D'Acosta's *Nat. Hiſt. of the Weſt Indies.*

N. B. The bird which the Mexicans call *Hotli*, mentioned by Fernandez, appears to be the ſame with the Black Falcon, of which we have ſpoken.

§ *Hiſt. des Navig. aux Terres Auſtrales.*

The

V.

The bird called *Tamas* by the Negroes of Senegal, and which was preſented to us by Adanſon under the name of *Fiſher-Falcon.* It reſembles the Common Falcon almoſt entirely in the colours of its plumage; it is, however, rather ſmaller, and has on its head long erect feathers, which are reflected back, and form a ſort of creſt that diſtinguiſhes it from all others of the ſame genus. Its bill is yellow, not ſo much curved, and thicker than that of the Common Falcon, and its mandibles have conſiderable indentations. Its inſtinct is alſo different; for it fiſhes rather than hunts. I imagine that this is the ſpecies which Dampier mentions by the name of *Fiſher-Falcon.* "It reſembles," he ſays, "in colour and figure our ſmaller ſorts of "Falcons; and its bill and talons are ſhaped "the ſame. It perches upon the dry branches "and trunks of trees that grow by the ſides of "creeks, rivers, or near the ſea-ſhore. When "they obſerve little fiſh near them, they ſkim "along the ſurface of the water, ſeize them "with their talons, and hurry them into the "air without wetting their wings." He adds "That they do not ſwallow the fiſh entire, like "other birds that ſubſiſt on that prey, but tear "it with their bill, and eat it by morſels." [A]

[A] This is the *Falco Piſcator* of Gmelin and Latham. The ſpecific character:—"It is half-creſted, the head ferruginous, the body cinereous, the quills have a duſky margin, the under ſide of the body pale yellowiſh, with duſky longitudinal ſpots."

The HOBBY.

Le Hobreau, Buff.
Falco Subbuteo, Linn. Ray, Will. Aldr. &c.
Falco Barletta, Ger. Orn.
Dendrofalco, Briff. Frifch.
Baum-Falck, Gunth. Neft.

THE Hobby is much ſmaller than the Falcon, and of a different diſpoſition. The fiery courage of the Falcon prompts him to attack birds that are far ſuperior in ſize; but the cautious Hobby, unleſs it is trained to the chace, never aſpires beyond the prey of larks and quails. The want of boldneſs, however, is compenſated by its induſtry. No ſooner does it eſpy the ſportſman and his dog than it hovers in the train, and endeavours to catch the ſmall birds that are put up before them; and what eſcapes the fowling-piece eludes not the Hobby. It ſeems not intimidated by the noiſe of fire-arms, and ignorant of their fatal effects; for it continues to keep cloſe to the perſon who ſhoots. It frequents the champaign country near woods, eſpecially where the larks are numerous. It commits great havoc among them, and theſe are well apprized of their fatal enemy; they are alarmed when they deſcry it, and inſtantly dive into the buſhes, or ſeek concealment in the herbage.

herbage. This is the only way in which the lark can effect its eſcape; for though it ſoars to a great height, the Hobby can ſtill outſtrip it. The Hobby lodges and breeds in the foreſts, and perches upon the talleſt trees. In ſome of our provinces the name of *Hobby* is applied to the petty barons who tyrannize over their peaſants, and more particularly to gentlemen of the ſport who chuſe to hunt on their neighbours' grounds without obtaining leave, and who hunt leſs for pleaſure than for profit *.

We may obſerve, that in this ſpecies the plumage is blacker during the firſt year than in the ſucceeding ones. In France there is a variety of the Hobby, which is repreſented Pl. Enl. N° 431. The difference conſiſts in this; that the throat, the lower part of the neck, the breaſt, a part of the belly, and the great feathers of the wings, are cinereous and without ſpots; whereas, in the Common Hobby, the throat and the lower part of the neck are white, the breaſt and the upper part of the belly are white alſo, with longitudinal brown ſpots, and the great feathers of the wings are almoſt blackiſh. The tail, which in the common ſpecies is whitiſh below, daſhed with brown, is in the variety entirely brown. But notwithſtanding ſuch

* This application of the name *Hobby* to country gentlemen might alſo be owing to another circumſtance. Thoſe who were not rich enough to keep Falcons were contented with breeding Hobbies.

differ-

differences, theſe two birds are ſtill of the ſame kind; for their ſize and port are the ſame, and they are both natives of France; and beſides, they have in common a ſingular character, that the lower part of the belly and the thighs are covered with feathers of a bright ruſt-colour, and which is ſtrongly contraſted with the reſt of the plumage. It is even not unlikely that all this diverſity of colours ariſes from the age or the ſeaſon of moulting.—We have only to add, that the Hobby is carried on the hand without any cover or hood like the Merlin, the Sparrow-hawk, and Gos-hawk, and that it was formerly much uſed in hunting partridges and quails. [A]

[A] The ſpecific character of the Hobby, *Falco Subbuteo*:—"The cere and feet yellow, the back duſky, the nape of the neck white, the abdomen pale with duſky oblong ſpots, the under ſide of the rump and the thighs rufous."

The male weighs ſeven ounces; the length twelve inches; the alar extent two feet ſeven inches. It inhabits Europe and Siberia. In ſummer it is frequent in England, where it breeds, and migrates in October.

It has been mentioned in the text, that the larks dread the ſight of the Hobby. They remain fixed to the ground through fear, which affords the fowler an opportunity of ſpreading his net over them. This was formerly practiſed, and termed *daring* the larks.

The German name *Baum-Falck* ſignifies Tree-Falcon, which Friſch has tranſlated into a compound Greek and Latin term, *Dendrofalco*.

The KESTREL*.

La Cresserelle, Buff.
Falco Tinnunculus, Linn. Ray, Will. Frisch. &c.
Cenchris, Klein.
Falco Aureus, Id.
Bothel Geyer, Gunth.
Kirch Falck, Brunn.
Windwachel, Rittelweyer, Wannenweyer, Kram.
Gheppio Acertello, Gavinello, Zinn.
Stannel, Stonegall, Windhover, Alb. Sloan, &c.

THE Keſtrel is one of the moſt common of the birds of prey in France, and eſpecially in Burgundy. There is ſcarcely an old caſtle or deſerted tower, but is inhabited by it; and in the mornings and evenings particularly it is ſeen flying about the ruins. It is ſtill oftener heard; it conſtantly repeats, when on the wing, its quick *pli*, *pli*, *pli*, or *prí*, *prí*, *prí*, and terrifies all the ſmall birds, on which it ſhoots like an arrow,

* The Greek name Κιγχρις, which ſignifies *millet*, is applied to the Keſtrel, becauſe, as Geſner conjectures, the plumage of this bird is ſprinkled with black ſpots like millet. The Latin appellation *Tinnunculus* from *Tinnitus*, probably alludes to its tinkling notes. The former, *Rothel Geyer*, means Reddiſh Vulture; *Kirch Falck*, Church Falcon; *Windwachel*, Wind-bird; *Rittelweyer*, Rider-kite; *Wannen-weyer*, Fanner-kite;—the three laſt refer to the fanning motion made by this bird.

In Italian it is alſo called *Tittinculo, Tintarello, Garinello, Canibello*. In Spaniſh, *Cernicalo*, or *Zernicalo*. It has been named in Engliſh, *the Stonegall*, or *Stannel*, and the *Windhover*.

and

and ſeizes them with its talons; or if it miſſes the firſt dart, it purſues them without fear even to the houſes: I have known my ſervants more than once catch the Keſtrel and its little fugitive, by opening the window or the hall-door, which was more than one hundred fathoms from the old walls where the purſuit commenced. After it has ſecured its prey, it kills it, and plucks the feathers neatly; but it is not at ſuch pains with mice, for it ſwallows the ſmall ones entire, and tears the large ones into pieces. The ſoft parts of the carcaſe are digeſted in the ſtomach of the bird, but the ſkin is rolled into a ball, and rejected at the bill. Its excrements are almoſt liquid, and whitiſh; and the rolls that are thrown out are found, by ſoaking in warm water, to be the entire ſkins of the mice. The Owls, Buzzards, and perhaps many other kinds of rapacious birds, reject alſo ſimilar balls, which, beſides the ſkin, contain often the hardeſt portions of the bones. The ſame is the caſe with Fiſher-birds; the bones and ſcales of the fiſhes are collected in the ſtomach, and thrown out at the bill.

The Keſtrel is a pretty bird; its ſight is acute, its flight eaſy and well ſupported: it has perſeverance and courage, and reſembles in its inſtinct the noble and generous birds; and perhaps it might be trained, like the Merlins, for falconry. The female is larger than the male: its head is ruſt-coloured, the upper ſide of its

back, wings, and tail marked with croſs bars of brown, and all the feathers of the tail are of a ruſty brown variouſly intenſe; but in the male, the head and tail are grey, and the upper parts of the back and wings are of a vinous ruſt colour, ſprinkled with a few ſmall black ſpots.

We cannot omit to obſerve, that ſome of our modern nomenclators have termed the female Keſtrel the *Lark-hawk (epervier des alouettes)*, and have reckoned it a diſtinct ſpecies from the Keſtrel.

Though this bird habitually frequents old buildings, it breeds ſeldomer in theſe than in the woods: and when it depoſits its eggs neither in the holes of walls nor in the cavities of trees, it conſtructs a very flimſy ſort of neſt, compoſed of ſticks and roots, pretty much like that of the jays, upon the talleſt trees of the foreſt; ſometimes it occupies the neſts deſerted by the crows. It lays four eggs, but oftener five, and ſometimes ſix or ſeven; of which the two ends have a reddiſh or yellowiſh tinge ſimilar to the plumage. Its young are at firſt covered with a white down, and fed with inſects; they are afterwards ſupplied with plenty of field mice, which it deſcries from aloft, as it hovers or wheels ſlowly round, and on which it inſtantly darts. Sometimes it carries off a red partridge, which is much heavier than itſelf, and often catches pigeons that ſtray from the flock. But, beſides field mice and reptiles, its ordinary prey are ſparrows, chaffinches, and other

other ſmall birds. As it is more prolific than moſt of the rapacious tribe, the ſpecies is more numerous and wider diffuſed; it is found through the whole extent of Europe, from Sweden to Italy and Spain, and it occurs even in the more temperate parts of North America. Many Keſtrels continue the whole year in France; but I have obſerved that they are much leſs frequent in winter than in ſummer, which induces me to think, that ſeveral migrate into other countries to paſs the inclement ſeaſon.

I have raiſed numbers of theſe birds in large volaries: they are, as I have already obſerved, of a very fine white during the firſt month; after which the feathers on the back become ruſty or brown in a few days: they are hardy, and eaſy to feed; they eat raw fleſh when it is offered to them, when they are a fortnight or three weeks old. They ſoon become acquainted with the perſon who takes care of them, and grow ſo tame as never to give offence: they early acquire their cry, and repeat the ſame in confinement as in the ſtate of liberty.—I have often known them eſcape, and return of their own accord after a day or two's abſence, probably compelled by hunger.

I am acquainted with no varieties of this ſpecies, except a few, in which the head and the two feathers of the middle of the tail are gray, ſuch as figured by Friſch; but Salerne mentions a yellow Keſtrel, which is found in Sologne,

and of which the eggs are of the ſame yellow hue. "This Keſtrel," ſays he, "is rare, and "fights nobly with the White John, which, "though ſtronger, is often forced to yield the "conteſt; they have been ſeen," he adds, "to hook together in the air, and fall to the "ground like a clod or a ſtone." This appears to me very improbable; for not only is the White John much ſuperior to the Keſtrel in ſtrength, but its movements are performed ſo differently, that the birds could ſcarcely ever meet. [A]

[A] The ſpecific character of the Keſtrel, *Falco Tinnunculus*, LINN. is, "that the cere and feet are yellowiſh; the back rufous, "with black points; the breaſt marked with duſky ſtreaks; the "tail rounded."

It was formerly trained in Great Britain, to catch ſmall birds and young partridges, but laid aſide when falconry fell into diſuſe.

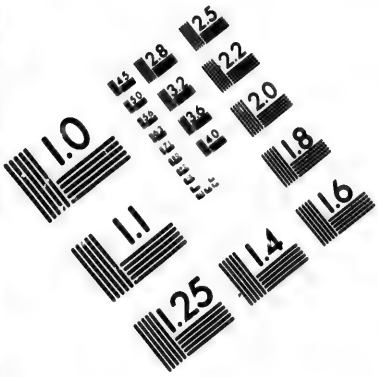
It is frequent in the deſerts of Tartary and Siberia, and breeds in the ſmall trees ſcattered through the open country. It appears in Sweden early in the ſpring, and departs in September. It is uncertain whether it penetrates farther north.

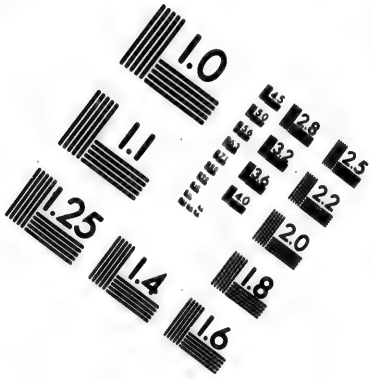
The STONE-FALCON.

...bier, Buff.
... Lithofalco, Gmel. Briſſ. Will. *&c.*

THIS bird is not ſo large as the Keſtrel, and appears to me very like the Merlin, which is employed in falconry. It lodges and breeds, we are told, in rocks. Friſch is the only naturaliſt preceding us, who has given a diſtinct deſcription of it; and, upon a compariſon of his figure with thoſe which we have given of the Keſtrel and Merlin, we are much inclined to believe, that the Stone-falcon and the ſpecies of the Merlin uſed in falconry are the ſame, or at leaſt cloſely related:—but we ſhall conſider this more particularly in the following article. [A]

[A] The Linnæan character of the Stone-falcon: "The cere is "yellowiſh, the upper ſide of the body cinereous, the under-ſide "rufous, with duſky longitudinal ſpots, the tail cinereous, black-"iſh near the end, the tip white."—It is about the ſize of a Keſtrel, and twelve inches and one-fourth long.





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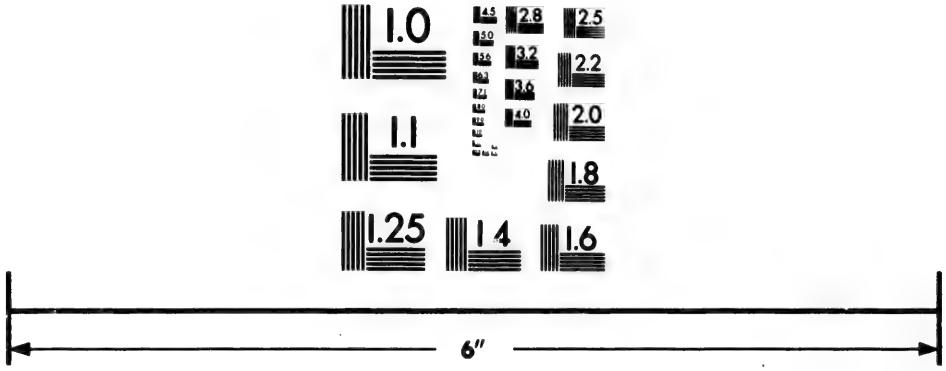

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The MERLIN*.

L'Emerillon, Buff.
Falco Æſalon, Gmel. Ray. Will. Klein. Briſſ.
Cenchris, Friſ.
Accipiter Smerillus, Ger. Orn.

THE ſubject of this article is not the Merlin of the naturaliſts, but that of the falconers, which has not been well deſcribed by any of our nomenclators. If we except the Butcher-bird, it is the ſmalleſt of all the rapacious tribe, not exceeding the ſize of a large thruſh. Still we muſt reckon it a generous kind, and the neareſt approaching the ſpecies of the Falcon: it has the ſame plumage †, the ſame ſhape and attitude, the ſame diſpoſition and docility, and not inferior in ardour and courage. It can be ſucceſsfully flown againſt larks, quails, and even partridges, which it ſeizes and carries off, though they are much heavier than itſelf; often

* The Latin name *æſalon*, is the ſame with the Greek αισαλων, which is of uncertain derivation. The modern names ſeem to allude to its preying upon blackbirds, *merulæ*: *Smerlo* or *Smerglio* in Italian; *Myrle* or *Smyrlin* in German; and *Merlin* in Engliſh. In ſome provinces of France, it is called the *Paſſetier*, or *Sparrow-catcher*.

† It actually reſembles the Sorrel-Falcon in the ſhades and diſtribution of its colours.

it

it kills them with one blow, ſtriking on the ſtomach, head, or the neck.

This ſmall bird, which reſembles the Common-falcon ſo much in its diſpoſition and courage *, is however ſhaped more like the Hobby, and ſtill more like the Stone-falcon: but its wings are much ſhorter than thoſe of the Hobby, and reach not near the end of the tail; while, in the Hobby, they project ſomewhat beyond it. We have hinted in the preceding article, that its relation to the Stone-falcon is ſo clear, in the thickneſs and length of the body, in the ſhape of the bill, feet, and talons, in the colours of the plumage, the diſtribution of the ſpots, &c. that there is reaſon to ſuppoſe that the Stone-falcon is a variety of the Merlin, or at leaſt that they are two ſpecies ſo nearly connected, that they ought to ſuſpend any deciſion reſpecting their diverſity.—The Merlin differs from the Falcons, and indeed all the rapacious tribe, by a character which approximates it to the common claſs of birds; viz. the male and female are of the ſame ſize. The great inequality of ſize therefore obſerved between the ſexes in birds of prey, cannot be attributed to the mode of life, or to any peculiar habit: it would ſeem at firſt to depend upon the magnitude; for, in the Butcher-birds, which are ſtill ſmaller than the Merlins, the males and

* Many others have mentioned the analogy between the Merlin and the Falcon; they have termed it the *Little Falcon, Falco parvus Merlinus*. SCHWENCK. and FALCONELLUS. RZACHYNSKI.

females

females are of the ſame ſize; while, in the Eagles, the Vultures, the Jer-falcons, the Goshawks, the Falcons, and the Sparrow-hawks, the female is a third larger than the male. Upon conſulting the accounts of the diſſection of birds, I find that moſt females have a large double *cæcum*, while the males have only one *cæcum*, and ſometimes none at all: this difference of the internal ſtructure, which is much more frequent in the females than in the males, is perhaps the true phyſical cauſe of this exuberant growth. I ſhall leave it to anatomiſts to aſcertain the fact more accurately.

The Merlin flies low, though with great celerity and eaſe: it frequents woods and buſhes to ſeize the ſmall birds, and hunts alone unaſſiſted by its female: it breeds in the mountain foreſts, and lays five or ſix eggs.

But, beſides the one we have juſt deſcribed, there is another kind of Merlin better known by naturaliſts, which Friſch has figured and Briſſon deſcribed from nature. This differs conſiderably from the former, and ſeems to reſemble more the Keſtrel; at le[illegible] if we may judge from the figure, not being [illegible] to procure a ſpecimen. But another circumſtance ſeems to countenance this opinion: the American birds, which we received by the name of the *Cayenne Merlin* (Pl. Enl. N° 444), and the *St. Domingo Merlin* (Pl. Enl. N° 465), appear to be varieties, or perhaps the male and female, of the ſame ſpecies,

and, when viewed attentively, diſcover more reſemblance to the Keſtrel than to the Merlin of the falconers. This would imply, that the Keſtrel has migrated into the new continent; and accordingly, as a further preſumption, Linnæus ranks it among the natives of Sweden, while he omits the Merlin. We may therefore diſtinguiſh it by a particular name, and that given it in the Antilles may not be improper. "The Merlin," ſays Father Tertre, "which our ſettlers call *gry-gry*, from the cries which it makes in flying, "is another ſmall bird of prey that is ſcarcely "larger than a thruſh: all the feathers on the "upper ſide of the back and wings are ruſty, "ſpotted with black; the under ſide of the "belly is white, ſpeckled with ermine: it is "armed with a bill and talons proportioned to "its ſize: it preys only on ſmall lizards and "graſs-hoppers, and ſometimes on young chick-"ens newly hatched: I have frequently reſcued "them; the hen makes a ſtout defence, and "drives off its enemy.—The ſettlers eat it, but "it is not very fat."

The reſemblance between the cry * of this Merlin of Father Tertre and that of the Keſtrel, is another mark of the proximity of theſe ſpecies; and it appears that we may conclude with tolerable certainty, that all the birds mentioned by

* The cry of the Keſtrel is *prĭ, prĭ*, which is much like *gry-gry*, the name of the bird of the Antilles.

naturaliſts

naturaliſts under the names of *Merlin of Europe*, *Carolina* or *Cayenne Merlin*, and the *St. Domingo Merlin*, or that *of the Antilles*, form only one variety in the ſpecies of the Keſtrel, and which we may diſtinguiſh from the common Keſtrel by the appellation of *gry-gry*. [A]

[A] The ſpecific character of the Common Merlin, *Falco Æſalon* of Linnæus: "The cere and feet are yellow, the head "ferruginous, the upper ſide of the body aſh-cœrulean, with "ferruginous ſpots and ſtreaks, the underſide yellowiſh white, "with oblong ſpots." Gmelin and Latham regard the falconers' Merlin, and that of the Antilles, as ſimple varieties.

The SHRIKES.

*Les Pie-Grieches**, Buff.

(Including the genus Lanius *in the Linnæan ſyſtem.)*

THOUGH theſe birds are ſmall and of a delicate make, yet their courage, their appetite for carnage, and their large hooked bill, entitle them to be ranked with the boldeſt and the moſt ſanguinary of the rapacious tribe: it is aſtoniſhing with what intrepidity the little Shrikes combat the Magpies, the Crows, and the Keſtrels, which are all much larger and ſtronger than themſelves. Not only do they act on the defenſive, but they ſometimes commence the attack; and they are ever ſucceſsful in the rencounter, eſpecially when the parents unite to drive the birds of prey to a diſtance from their neſt. If they fly near their retreats, the Shrikes ruſh upon them with loud cries, inflict terrible wounds, and force them to retire with little inclination to repeat the viſit. The more generous of the rapacious tribe regard them with reſpect, and the Kites, the Buzzards, and the Crows ſeem rather intimidated at their appearance. Nothing in nature can give a better idea of the privileges annexed to courage,

* i. e. The Speckled Magpie.

than

than to ſee theſe little birds, ſcarcely equal in ſize to the larks, flying with ſecurity among the Sparrow-hawks, the Falcons, and other tyrants of the air, and hunting in their domains without apprehending danger: for, though they commonly live upon inſects, they prefer fleſh; they chaſe all the ſmall birds upon wing, and they ſometimes catch partridges and young hares. Thruſhes, black-birds, and other birds caught in the nooſe, are their common prey; they fix on them with their talons, ſplit the ſkull with their bill, ſqueeze or cut the neck, and then pluck off the feathers, and feed at their leiſure, and tranſport the mangled fragments to their neſts.

The genus of theſe birds conſiſts of a vaſt number of ſpecies; but we may reduce thoſe of our climate to three principal ones: theſe are, the Great Cinereous Shrike, the Woodchat, and the Red-backed Shrike. Each of theſe three ſpecies requires a ſeparate deſcription, and includes ſome varieties which we ſhall notice.

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THE GREAT CINEREOUS SHRIKE

The Great CINEREOUS SHRIKE.

La Pie-Grieche Griſe *, Buff.
Lanius Excubitor, Linn. Brun. Kram.
Falco Congener, Klein.
Lanius, ſeu *Collurio Cinereus Major*, Ray & Will. Briſſ. & Friſ.
Ferlotta Berettina, Zinn.
Caſtrica Palombina, Olin.
Il Falconetti, Cett.
The Greater Butcher bird, or *Mattageſs*; in the north of England *Wierangle*, Will.
The Night Jar, Mort. North.
The Butcher bird, Murdering bird, or *Shreek* †, Mer. Pinax.

THIS bird is very common in France, where it continues during the whole year. It inhabits the woods and mountains in ſummer, and reſorts to the plains and near our dwellings in winter. It breeds among the hills, either on the ground or on the loftieſt trees. Its neſt is compoſed of white moſs interwoven with long graſs, and well lined with wool, and is commonly faſtened to the triple cleft of a branch. The female, which differs not from the male in point of ſize, and is only diſtinguiſhed by the lighter caſt of its plumage, lays generally five or ſix eggs,

* *i. e.* The Grey Speckled Magpie.

† In modern Greek it is called *Collurio*; the Latin name *Lanius* ſignifies a *butcher*. In Italian it is termed *Gaza Sperviera, Falconello, Oreſto, Caſtrica, Verla, Stragazzina, Ragazzoia*: in German, *Thorn-Kretzer, Warkengel, Nun-Maerder*: in Poliſh, *Zierzba, Strakoz, Wiekſzy*.

ſome-

ſometimes ſeven or even eight, as large as thoſe of a thruſh. She feeds her young at firſt with caterpillars and other inſects, but ſoon inſtructs them to eat bits of fleſh, which her mate brings with wonderful care and attention. Very different from the other birds of prey, which expel their helpleſs brood, the Shrike treats its infant young with the moſt tender affection, and even after they are grown ſtill retains its attachment. Towards autumn the offspring aſſiſt the parents in providing for the common ſupport; and the members of the family continue during winter to live in harmony, till the genial influence of ſpring awakens the appetite for propagation, and forms other unions.

The Shrikes may be diſtinguiſhed both by their flying in ſmall troops after the breeding ſeaſon, and by their zig-zag courſe, which waves not ſideways, but bends with ſudden flexures upwards and downwards. They are alſo diſcovered by their ſhrill cry *trŏuī*, *trŏuī*, which can be heard at a great diſtance, and which they inceſſantly repeat when perched on the ſummits of trees.

In this firſt ſpecies there is a variety in the ſize, and another in the colour. We have received for the King's cabinet a Shrike from Italy, which differs from the common kind only by a ruſty tinge on the breaſt and belly (Pl. Enl. N° 32, Fig. 1.). Some are found entirely white on the Alps,

Alps *, which, as well as thoſe with a rufous tinge on the belly, are of the ſame ſize with the Great Cinereous Shrike, and it does not exceed the red-wing †. But others are found in Germany and Switzerland which are ſomewhat larger, and which ſeveral naturaliſts have reckoned a different ſpecies; yet in other reſpects theſe birds are ſimilar, and their growth might be affected by the plenty or ſcarcity of ſubſiſtence which the country affords. And if the Great Cinereous Shrike varies ſomewhat in Europe, we may expect it to vary ſtill more in remote climates. That of Louiſiana (Fig. 2, N° 476, Pl. Enl.) is the ſame with the common kind, differing leſs than the Italian bird; only it is rather ſmaller, and of a deeper caſt on the upper parts of the body. Thoſe from the Cape of Good Hope ‡ (Fig. 1, N° 477), and Senegal (Fig.

* *Lanius Albus*, ALDROV. This is the ſecond variety of Linnæus:—"Its body white; its feet yellowiſh; the bill and nails blackiſh."

† *Lanius Major*, GESNER; and the *Groeſerer Neuntoeder* of FRISCH. It is the third variety of *Lanius Excubitor*, LINN. It is larger and thicker than the former; the ſcapular feathers, and the ſmall coverts of the upper ſide of the wing, are ruſty-coloured: But theſe differences are too minute to conſtitute a ſeparate ſpecies.

‡ To this ſpecies we muſt alſo refer the Eaſt-India bird which the Engliſh that viſit the coaſts of Bengal term the *Dial-bird*, and which is deſcribed by Albin with figures of the cock and hen. "This Shrike is very large, he ſays, and very ſimilar to the Great Cinereous Shrike; its bill black, the corners of the mouth yellow, the iris of the ſame colour, the legs and feet brown. In the male, the head, the neck, the back, the rump, and the coverts of the upper ſide of the tail, the ſcapular feathers, the throat, and the

(Fig. 1. N° 297), and the Blue Shrike from Madagaſcar (Fig. 1, N° 298), appear to be three contiguous varieties, and equally related to the Great Cinereous Shrike of Europe. The only differences are, that in the one from the Cape, the upper parts of the body are of a blackiſh brown; in that from Senegal, they are of a lighter brown; and in that from Madagaſcar, they are of a fine blue: but ſuch differences of plumage may ſtill have place in the ſame ſpecies, for we ſhall have frequent occaſion to point out as great changes produced in our own climates, and the variations ought to be ſtill greater in diſtant regions. The Shrike from Louiſiana reſembles that of Italy; and the temperature of theſe countries are nearly alike. The others, from the Cape, Senegal, and Madagaſcar, bear leſs analogy; and the climates to which they belong are alſo more different.—The Shrike from Cayenne is variegated with long brown bars (Pl. Enl. N° 297); but the ſize and other properties being the ſame, we have ranged it likewiſe with the common kind. [A]

breaſt, are black; the belly, the flanks, and the coverts of the under-ſide of the tail, white; all the feathers of the tail of an equal length, black above and white beneath. The female is diſtinguiſhed from the male by its fainter colours."

[A] Specific character of the Great Cinereous Shrike, *Lanius Excubitor*, LINN. "The tail wedge-ſhaped, its lateral quills white; the back hoary; the wings black, with a white ſpot." Its length is ten inches, its breadth acroſs the wings fourteen inches, and it weighs three ounces. It ſeizes ſmall birds by the throat, and ſtrangles

ſtrangles them; then ſpits them on ſome thorn, and tears them to pieces with its bill. Even when confined in a cage, it ſticks its meat againſt the wires, and tears it in the ſame manner.—It is frequent in Ruſſia, but ſeems not to have penetrated to Siberia. It inhabits the whole extent of North America. In Hudſon's-bay it breeds in the woods diſtant from the coaſt. It makes its neſt with dry graſs, which it lines thick with feathers.

The WOODCHAT.

La Pie-Grieche Rouſſe *, Buff.
Lanius Rutilus, Lath.
Lanius Rufus, Briſſ. and Gmel.
Lanius Pomeranus, Muſ. Carlſc.
Lanius Minor Cineraceus, Ray, Klein, Friſ.
Ampelis Dorſo Griſeo, Faun. Suec. ed. 1. and Kram.
Buſerola, Ferlotta Bianca, Zinn.

THIS bird is rather ſmaller than the preceding, and may eaſily be diſtinguiſhed by the tinge of its head, which is ſometimes red, and commonly bright ferruginous; its eyes alſo are whitiſh or yellowiſh, while in the Great Cinereous Shrike they are brown, and its bill and legs are blacker. Its inſtincts, however, are nearly the ſame; both of them are bold and miſchievous, yet they are evidently of different ſpecies; for the Great Cinereous Shrike is a permanent ſettler, while the Woodchat quits the country in autumn, and returns not till ſpring. The family, which does not diſperſe after the young are fledged, departs alone in the beginning of September; they flutter from tree to tree, and ſupport not a continued flight even in their migrations. They reſide during ſummer in the plains, and neſtle on the buſhy trees; in

* *i. e.* The Rufous Speckled Magpie.

that

that ſeaſon the Great Cinereous Shrike inhabits the foreſts, and ſeldom emerges from the retreat till after the departure of the Woodchat. The Woodchat is ſaid to be the moſt palatable of all the Shrikes, or perhaps the only one that is fit to be eaten *.

The male and female are almoſt exactly of the ſame ſize, but differ ſo much in their colours as to appear of diſtinct ſpecies. I ſhall only add, that both the Woodchat and the Red-backed Shrike conſtruct their neſt very neatly, and employ the ſame materials as the Great Cinereous Shrike; the moſs and wool are ſo well connected with ſmall pliant roots, long fine graſs, and the tender ſhoots of low ſhrubs, that the whole ſeems interwoven. It has generally five or ſix eggs, ſometimes more; theſe are of a whitiſh ground, and either entirely or partly ſpotted with brown or fulvous. [A]

* Schwenckfeld.

[A] The Woodchat, *Lanius Rutilus* of LATHAM, is thus deſcribed:—"Its upper ſide conſiſts of three colours, its under ſide is rufous-white; the whole of the ſcapular feathers, the quills of the tail from the baſe to the middle, and the iris of the lateral ones, white; and a black ſtreak through the eyes." It includes the *Lanius Rufus* of Gmelin, which is the third variety of the *Lanius Collurio* of Linnæus, or the Red-backed Shrike; and alſo the *Lanius Pomeranus*, firſt deſcribed by Sparmann."

The RED-BACKED SHRIKE.

L'Ecorcheur, Buff.
Lanius-Collurio, Linn. Gmel. Briſſ. Brun. Kram, &c.
Lanius Minor Rufus, Ray and Will.
Lanius Æruginoſus Major, Klein.
Ferlotta Roſſa, Zinn.
The Leſſer Butcher bird, called in Yorkſhire *Fluſher*, Will.

THE Red-backed Shrike is only a little ſmaller than the Woodchat; and its habits are ſimilar. It departs with its family in September, and returns in the ſpring. It breeds in the trees or buſhes in the open country, and not in the woods. It feeds its young commonly with inſects, and preys upon the ſmall birds. In ſhort, the only material difference conſiſts in the ſize, and in the diſtribution and ſhades of the colours, which ſeem to be invariably diſcriminated in both ſpecies: but the difference is ſtill greater between the male and female in each ſpecies. We may therefore with propriety regard the Woodchat, the Red-backed Shrike, and the variegated Red-backed Shrike, as varieties of the ſame ſpecies. Some naturaliſts* have indeed reckoned the laſt a diſtinct ſpecies; but the compariſon of the figures ſeems to prove that it is only the female of the Red-backed Shrike.

* *Collurionis parvi ſecundum genus.* ALDROV. *Collurio varius.* BRISS.

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THE RED BACKED SHRIKE.

Theſe two ſpecies of Shrikes, with their varieties, breed in Sweden as well as in France. We may preſume therefore that they will be found in the new continent; and we may reckon the foreign kinds as only varieties of the Woodchat produced by the influence of climate.

Nothing can ſhew better that birds migrate into warmer countries to paſs the winter, than the Woodchat (N° 477, Fig. 2, Pl. Enl.) ſent by Adanſon from Senegal, and which is preciſely the ſame with the European Woodchat. There is another (N° 279, Pl. Enl.) which we received from the ſame place, and which may be regarded as merely a variety, ſince the only difference is, that its head is black, and its tail rather longer, which is not material.

The ſame obſervation may be extended to what we have called the *Philippine Woodchat** (Pl. Enl. N° 476, Fig. 1.), and alſo to the *Louiſiana Shrike* (Pl. Enl. N° 397), which, though brought from climates widely different, appear to be really the

* It would appear that this bird is the ſame with what Edwards has called the *Red* or *Rufous Creſted Shrike*. "This bird, ſays he, is termed Charah in the country of Bengal, and differs from our Shrikes by its creſt." But this difference is ſlight; for what Edwards takes for a creſt is only the feathers briſtled, as in the Jay when irritated. He confeſſes, that he only ſaw the dried ſpecimen; and what evinces our poſition is, that the ſame naturaliſt gives a figure of the Black and White Shrike of Surinam in the firſt part of his Gleanings, where it is repreſented with a creſt; yet we have that ſpecies in the King's cabinet, and it undoubtedly is not furniſhed with a creſt. Edwards was therefore miſled by ſome accidental derangement of the feathers; and we may ſtill aſſert that the Bengal Shrike is only a variety of the Red-backed Shrike.

ſame bird, and only a variety of the Red-backed Shrike, whoſe female it reſembles almoſt exactly. [A]

[A] Specific character of the Red-backed Shrike, *Lanius-Collurio*, LINN. "Its tail ſomewhat of a wedge-ſhape, the back grey, the four middle quills of the tail of an uniform colour, the bill lead-coloured." It is ſeven inches and a half long, its alar extent eleven inches; the male weighs two ounces, the female two ounces and two grains; it inhabits Europe, and is migratory, appearing in May, and returning in September or October.

FOREIGN BIRDS,

RELATED TO THE GREAT CINEREOUS AND RED-BACKED SHRIKES.

I.

The FORK-TAILED SHRIKE*.

Le Fingah, Buff.
Lanius Cæruleſcens, Linn.
Lanius Bengalenſis Cauda Bifurca, Briſſ. and Klein.
The Forked-tail Butcher-bird, Edw.

EDWARDS ſpeaks of this bird in the following terms:—The ſhape of its bill, the whiſkers at its baſe, and the ſtrength of its legs, have induced me to range it with the Shrikes; though its tail is different, being forked, while that of the Shrike has the longeſt feathers in the middle. Its bill is ſtrong, thick, and arched, nearly like that of a Sparrow-hawk, but longer in proportion to its thickneſs, leſs hooked, and with wide noſtrils. The baſe of the upper mandible is beſet with ſtiff hairs. . . . The whole of the head, neck, back, and the coverts of the wings, are of a ſhining black, with reflections of blue, purple, and green, varying according to its poſition. . . . The breaſt is of an aſh-colour, duſky,

* The ſpecific character:—"The tail forked, the body cæruleau black, the abdomen white."

and

and blackiſh. All the belly, the legs, and the coverts of the under ſide of the tail, are white; the legs, the feet, and the nails, are blackiſh brown.—I am at a loſs, ſubjoins Edwards, whether I ſhould claſs this bird with the Shrikes or the magpies; for it appears to be equally related to each of them; and I am even inclined to think that both conſtitute only one ſpecies.—This conformity ſeems to have been obſerved in France, where the name *pie* is applied equally to the Shrikes and magpies.

II.

The BENGAL SHRIKE*.

Rouge-Queue, Buff.
Lanius-Emeria, Linn. and Gmel.
Lanius Bengalenſis Fuſcus, Briſſ.
The Indian Redſtart, Edw.
The Bengal Redſtart, Alb.

This is alſo an Eaſt-India bird. It is deſcribed and figured by Albin. It is nearly of the ſame ſize as the Great Cinereous Shrike of Europe; its bill is cinereous brown; its iris whitiſh; the upper part, and the back of the head, black; below the eyes is a lively orange ſpot terminated with white; and on the tail four black ſpots, making a ſegment of a circle; the

* The ſpecific character:—"It is grey, white beneath, the temples and rump red." It is five inches and a half long.

upper

upper part of the neck, the back, the rump, the ſuperior coverts of the tail, the inferior coverts of the wings, and the ſcapular feathers, are brown; the throat, the upper part of the neck, the breaſt, the higher part of the belly, and the inferior coverts of the tail, are red; the tail is light brown; the feet and nails are black.

III.

LANGARIEN and TCHA-CHERT.

The bird ſent from Manilla under the name of *Langarien* *, and the other from Madagaſcar under that of *Tcha-chert* †, have perhaps been improperly referred to the genus of Shrikes; for their wings extend beyond the tail; while, in the other ſpecies, they do not reach ſo far as the tail. But the one from Madagaſcar reſembles much our Great Cinereous Shrike; and, ſetting aſide the difference of the length of the wings, we may conſider it as the intermediate ſhade between that and the Manilla bird, to which however it is nearer related; and as we know

* The *Langarien* is the *Lanius Leucorynchos* of GMELIN, and the *White-billed Shrike* of LATHAM. Its ſpecific character:—"Blackiſh above, whitiſh below; the bill, breaſt, abdomen, and rump, white." It is ſeven inches long.

† The *Cha-Chert* is the *Lanius Viridis* of GMELIN, and the *Green Shrike* of LATHAM. Specific character:—"The upper ſurface of the head, body, and wings, dull green; the body white beneath, the tail black." The length near ſix inches.

no other genus to which we could directly refer them, we ſhall follow the opinion of the reſt of the naturaliſts, remarking at the ſame time the uncertainty of the determination.

IV.

The CAYENNE SHRIKE.

Becarde *, Buff.
Lanius Cayanus †, Linn. Gmel. and Briſſ.

Two of theſe birds were ſent; the one under the name of the Grey Shrike, the other under that of the Spotted Shrike. Their bill is large and red; their head is entirely black; and their ſize exceeds that of the European Shrikes, though they reſemble theſe on the whole more than any birds of our latitudes. They ſeem to be the male and female of the ſame ſpecies.

* So called on account of the thickneſs and length of the bill (*bec*).

† The ſpecific character:—"Cinereous, the head, the quills of the wings, and the primaries of the tail, black." It is of the ſize of the blackbird, being eight inches and a half long.

V.

The YELLOW-BELLIED SHRIKE*.

Becarde a Ventre Jaune, Buff.
Lanius Sulphuratus, Linn. and Gmel.
Lanius Cayanenſis Luteus, Briſſ.

This bird has a long bill like the preceding, and therefore related to it. Indeed, the only difference conſiſts in the colours of the plumage.

* Specific character: — "Duſky; yellow beneath, the head blackiſh, and encircled by a whitiſh ſtripe." It is near nine inches in length.

VI.

The HOOK-BILLED SHRIKE†.

Le Vanga, ou *Becarde a Ventre Jaune*, Buff.
Lanius Curviroſtris, Linn. and Gmel.
Collurio Madagaſcarienſis, Briſſ.
Lanius Major Nigro & Albo Mixtus, Gerin. Orn.

This bird was ſent from Madagaſcar by Polvre, under the name of *Vanga*. Though conſiderably different from the Shrikes, it ſeems to be more related to them than any other birds of Europe:—It bears a reſemblance to the two preceding.

† Specific character: —"The tail wedge-ſhape, the body white, the back black, the five firſt quills of the wings marked with a white ſpot." It feeds upon fruits. It is ten inches long.

VII.

The RUFOUS SHRIKE*.

Schet-bé, Buff.
Lanius Rufus, Linn. and Gmel.
Lanius Madagaſcarenſis Rufus, Briſſ.

This was alſo ſent from Madagaſcar by Poivre:—It is much like the preceding, and, did not the diſtance of the countries preclude the idea, we might ſuppoſe them to conſtitute the ſame ſpecies. The Rufous Shrike is leſs removed from the European Shrikes, than thoſe of Cayenne, for its bill is ſhorter.

* Specific character:—"Rufous, white beneath, the head greeniſh-black." It is about eight inches long.

VIII.

The WHITE-HEADED SHRIKE †.

Tcha-Chert-Bé, Buff.
Lanius Leucocephalus, Gmel.
Lanius Madagaſcarienſis Major Viridis, Briſſ.

We received this bird by the ſame channel:—It ſeems to be a proximate ſpecies of the pre-

† Specific character:—"Head white, the upper ſide of the body is a greeniſh-black, and beneath black; the bill, feet, and nails lead-coloured." It is eight inches long.

ceding,

ceding, or perhaps a variety of age or ſex, its bill only being ſomewhat ſhorter and leſs hooked, and its colours rather differently diſtributed. Indeed all theſe five birds with thick bills might form a ſmall ſeparate genus.

IX.

The BARBARY SHRIKE*.

Le Gonolek, Buff.
Lanius Barbarus, Linn. and Gmel.
Lanius Senegalenſis Ruber, Briſſ.

We received this bird from Senegal, where the Negroes, as Adanſon informs us, call it *gonolek*, that is, *feeder on inſects*. It is painted with the moſt vivid colours: it is nearly of the ſame ſize as the European Shrike, and ſcarcely differs in any thing but the diſtribution of its tints, which is however nearly ſimilar to what has place in the Great Cinereous Shrike of Europe.

* Specific character:—"Black, beneath red, the crown and thighs fulvous." It is about nine inches long.

X.

The MADAGASCAR SHRIKE*.

Lanius Madagaſcarenſis, Linn. Gmel. and Briſ.

Both the male and female of this bird were ſent from Madagaſcar by Poivre; the former under the name of *Cali-calic*, and the latter under that of *Bruia*. We might, on account of its ſmallneſs, refer it to the genus of the European Red-backed Shrike; but it differs ſo much, that it ought to be regarded as a diſtinct ſpecies.

* Specific character:—"Cinereous, beneath whitiſh, the lines between the bill and the eyes black, the quills of the wings tawny." It is five inches long, and about the ſize of a ſparrow.

XI.

The CRESTED SHRIKE†.

Pie-Grièche Huppée.
Lanius Canadenſis.

This bird, which was brought from Canada, has on the crown of its head a ſoft creſt, with long feathers that fall backwards. It is ſimilar to our Woodchat in the diſtribution of its colours, and may be regarded as a contiguous ſpecies, differing ſcarcely in any thing but the creſt and the bill, which is rather thicker.

† Specific character:—"The tail is wedge-ſhaped, the head creſted, the body tawny, and below waved with fulvous, and duſky." It is ſix inches and a half long. Sometimes wants the creſt.

The NOCTURNAL BIRDS of PREY.

THE eyes of theſe birds are ſo delicate, that they ſeem to be dazzled by the ſplendor of day, and entirely overpowered by the luſtre of the ſolar rays; they require a gentler light, ſuch as prevails at the dawn, or in the evening ſhades. They leave their retreats to hunt, or rather to ſearch for their prey, and their expeditions are performed with great advantage; for in this ſtill ſeaſon, the other birds and ſmall animals feel the ſoft influence of ſleep, or are about to yield to its ſoothing power. Thoſe nights that are cheered by the preſence of the moon, are to them the fineſt of days, days of pleaſure and of abundance, in which they ſeek their prey for ſeveral hours together, and procure an ample ſupply of proviſions. When ſhe withholds her ſilver beams, their nights are not fortunate; and their ravages are confined to a ſingle hour in the morning and in the evening; for we cannot ſuppoſe that theſe birds, though they can diſtinguiſh objects nicely in a weak light, are able to perform their motions when involved in total darkneſs. Their ſight fails when the

gloom of night is completely ſettled; and in this reſpect they differ not from other animals, ſuch as hares, wolves, and ſtags, which leave the woods in the evening to feed or to hunt during the night: only, theſe animals ſee ſtill better in the day than in the night; whereas the organs of viſion in the nocturnal birds are ſo much overpowered by the brightneſs of the day, that they are obliged to remain in the ſame ſpot without ſtirring; and when they are forced to leave their retreat, their flight is tardy and interrupted, being afraid of ſtriking againſt the intervening obſtacles. The other birds, perceiving their fear, or their conſtrained ſituation, delight to inſult them: the tit-mouſe, the finch, the red-breaſt, the black-bird, the jay, the thruſh, &c. aſſemble to enjoy the ſport. The bird of night remains perched upon a branch, motionleſs and confounded, hears their movements and their cries, which are inceſſantly repeated, becauſe it anſwers them only with inſignificant geſtures, turning round its head, its eyes, and its body with a fooliſh air. It even ſuffers itſelf to be aſſaulted without making reſiſtance; the ſmalleſt, the weakeſt of its enemies are the moſt eager to torment it the moſt, determined to turn it into ridicule. Upon this play of mockery, or of natural antipathy, is founded the pretty art of bird-calling. We have only to put an Owl, or even to imitate its notes, in the place where the limed twigs are ſpread, in order to draw the other

birds*. The beſt time is about an hour before the cloſe of the day; for if this diverſion be deferred later, the ſame ſmall birds which aſſemble in the day to inſult over the bird of night with ſo much audacity and obſtinacy, avoid the rencounter after the evening ſhades have reſtored his vigour, and encouraged his exertions.

All this muſt be underſtood with certain reſtrictions, which it will be proper to ſtate here: 1. All the ſpecies of Owls are not alike dazzled with the light; the Great-eared Owl ſees ſo diſtinctly in open day, as to be able to fly to conſiderable diſtances; the Little Owl chaces and catches its prey long before the ſetting, and after the riſing of the ſun. Travellers inform us, that the Great-eared Owl or Eagle-Owl of North America catches the white grous in open day, and even when the reflection of the ſnow adds to the intenſity of the light: Belon remarks, that "whoever will examine the ſight of theſe birds, "will find it not ſo weak as is commonly ima-"gined." 2. It appears that the Long-eared Owl ſees worſe than the Scops, and is the moſt dazzled by the light of day, as are alſo the Tawny Owl, the White, and the Aluco; for theſe equally attract the ſame birds, and afford

* This ſort of ſport was known to the antients; for Ariſtotle diſtinctly mentions it in the following terms: "In the day all the other ſmall birds flock round the Owl, to admire it, as it is called, and ſtrike it. Whence, if it is ſet in a proper place, many ſort of ſmall birds may be caught."

them ſport. But before we relate the facts which apply to each particular ſpecies, we muſt mention the general diſtinctions.

The Nocturnal Birds of Prey may be divided into two principal *genera:* the genus of the *Hibou*, (the Long-eared or Horned Owl,) and that of the *Chouette*, (the Earleſs or Little Owl,) each of which contains ſeveral different ſpecies. The diſtinguiſhing character of theſe two *genera* is, that all the *Hibous* have two tufts of feathers in the ſhape of ears erect on each ſide of the head; while, in the *Chouettes*, the head is round without tufts or prominent feathers *. We ſhall reduce the ſpecies contained in the genus of the *Hibou* to three. Theſe are, 1. The Great-eared Owl. 2. The Long-eared. 3. The Scops. But the genus of *Chouette* includes at leaſt five ſpecies: which are, 1. The Aluco. 2. The Tawny. 3. The White. 4. The Brown. And 5. The Little Owl. Theſe eight ſpecies are all found in Europe, and even in France; ſome are ſubject to varieties, which ſeem to depend on the difference of climates; others occur that reſemble them in the New

* Pliny ſeems to have remarked this diſtinction: "Of the feathered race, the *Bubo* and the *Otus* alone have feathers like ears." Lib. xi. 37. And again, "The *Otis* is ſmaller than the *Bubo*, larger than the *Noctuæ*, and has feathers projecting from the ears, whence its name; ſome call it in Latin *Aſio*." Lib. x. 23. N. B. There are three ſpecies with tufted ears: the Great-eared Owl *(Bubo)*; the Long-eared Owl *(Otus)*; and the Scops-eared Owl *(Aſio)*, which Pliny confounds with the *Otus*.

World;

World; and indeed, moſt of the Owls of America differ ſo little from thoſe of Europe, that we may refer them to the ſame origin.

Ariſtotle mentions twelve ſpecies of birds which ſee in the dark, and fly during the night; and as in theſe he includes the Oſprey and Goat-ſucker, under the names of *Phinis* and *Ægotilas;* and three others, under the names of *Capriceps*, *Chalcis*, and *Charadrios*, which feed on fiſh, and inhabit marſhes, or the margins of lakes and ſtreams, it appears that he has reduced all the Owls known in Greece in his time to ſeven ſpecies: the Long-eared, which he calls Ωτος, *otus*, precedes and conducts the quails when they begin their migration, and for this reaſon it is named *dux*, or *leader*; the etymology ſeems certain, but the fact muſt be ſuſpected. It is true that the quails, when they leave us in the autumn, are exceſſively fat, and ſcarcely fly but in the night, and repoſe during the day in the ſhade to avoid the heat; and hence the Long-eared Owl may ſometimes be obſerved to accompany or go before theſe flocks of quails; but it has never been obſerved that the Long-eared Owl is, like the quail, a bird of paſſage. The only fact which I have found in travellers that ſeems to countenance this opinion, is in the Preface to Cateſby's Natural Hiſtory of Carolina. He ſays, that in the twenty-ſixth degree of north latitude, being nearly in the middle of the Atlantic, in his paſſage to Carolina, he ſaw an Owl over the

veſſel; and he was more ſurpriſed at this circumſtance, as that bird has ſhort wings, and is eaſily fatigued. He adds, that after making ſeveral attempts to alight, it diſappeared.

It may be alleged in ſupport of this fact, that the Owls have not all ſhort wings, ſince in moſt of theſe birds they ſtretch beyond the point of the tail, and the Great-eared Owl and the Scops are the only ſpecies whoſe wings do not reach quite its length. Beſides, we learn from their ſcreams, that all theſe birds perform long journies; whence it ſeems that the power of flying to a diſtance during the night, belongs to them as well as to the others; but their ſight being leſs perfect, and not being able to deſcry remote objects, they cannot form an idea of a great extent of country, and therefore have not, like moſt other birds, the inſtinct of migration. At leaſt, it appears that our Owls are ſtationary. I have received all the ſpecies not only in ſummer, in ſpring, in autumn, but even in the moſt piercing colds of winter. The Scops alone diſappears in this ſeaſon; and I have actually been informed, that this ſmall ſpecies departs in the autumn, and arrives in the ſpring: hence we ought to aſcribe to the Scops, rather than the Long eared Owl, the buſineſs of leading the quails. But this fact is not proved, and I know not the foundation of another fact advanced by Ariſtotle, who ſays, that the Tawny Owl (*Glaux Noctua*, according to his tranſlator Gaza) conceals

ceals itſelf for ſeveral days together; for in the chilleſt ſeaſon of the year I have received ſome that were caught in the woods: and if it be pretended that the words *Glaux Noctua* ſignifies the White Owl, the fact would be ſtill wider off the truth; for except in very dark and rainy evenings, it is conſtantly heard through the whole year to whiſtle and ſcream about twilight.

The twelve Nocturnal Birds mentioned by Ariſtotle, are: 1. *Byas*; 2. *Otos*; 3. *Scops*; 4. *Phinis*; 5. *Ægotilas*; 6. *Eleos*; 7. *Nyctico-rax*; 8. *Ægolios*; 9. *Glaux*; 10. *Charadrios*; 11. *Chalcis*; 12. *Ægocephalus*; which Theodore Gaza tranſlates by the Latin words, 1. *Bubo*; 2. *Otus*; 3. *Aſio*; 4. *Offifraga*; 5. *Caprimulgus*; 6. *Aluco*; 7. *Cicunia*, *Cicuma*, *Ulula*; 8. *Ulula*; 9. *Noctua*; 10. *Charadrius*; 11. *Chalcis*; 12. *Capriceps*.

The nine firſt ſeem to be as follow:—

1. The Great-eared Owl; 2. The Long-eared Owl; 3. The Scops; 4. The Oſprey; 5. The Goat-ſucker; 6. The White Owl; 7. The Aluco Owl; 8. The Brown Owl; 9. The Tawny Owl.

All the naturaliſts and men of letters will readily admit that, 1. The *Byas* of the Greeks, *Bubo* of the Latins, is our Great-eared Owl. 2. That the *Otos* of the Greeks, *Otus* of the Latins, is our Long-eared Owl. 3. The name of Scops in the Greek, in Latin *Aſio*, is the Small Owl. 4. The *Phinis* of the Greeks, *Offifraga* of the Latins,

is the Oſprey. 5. The *Ægotilas* of the Greeks, *Caprimulgus* of the Latins, is the Goat-ſucker. 6. That the *Eleos* of the Greeks, *Aluco* of the Latins, is the White Owl. But at the ſame time it will be aſked, why I tranſlated *Glaux*, by the Tawny Owl; *Nyctícorax*, by *Aluco*; and the *Ægolios*, by the Brown Owl; while all the nomenclators and naturaliſts who have preceded me have rendered *Ægolios* by *Hulotte (Aluco)*, and are obliged to confeſs that they know not to what bird to refer the *Nyctícorax*, nor the *Charadrios*, the Chalcis, and the *Capriceps*. I ſhall be blamed for transferring the name of *Glaux* to the Tawny Owl, ſince it has been applied, by the uniform conſent of all who have gone before me, to the Brown Owl, or even to the Little Owl.

I proceed to explain the reaſons which have induced me to make theſe innovations, and to remove the obſcurity which attends their doubts and their falſe interpretations. Among the Nocturnal birds which we have enumerated, the Tawny Owl is the only one whoſe eyes are blueiſh, the Aluco the only one whoſe eyes are blackiſh; in all the reſt the iris is of a golden, or at leaſt of a ſaffron colour. But the Greeks, whoſe accuracy and preciſion of ideas I have often admired in the names which they have applied to the objects in nature, which always mark the characters in a ſtriking manner, would have had no foundation to beſtow the name of *Glaux (glaucous, cærulean)* upon birds which have none

none of the blue ſhade, and whoſe eyes are black, orange, or yellow; but they would have had the beſt reaſon to give this name to that ſingle ſpecies which is diſtinguiſhed from all the reſt by the blue tinge of its eyes; nor would they have called thoſe birds whoſe eyes are yellow or blue, and whoſe plumage is white or grey, and bear no reſemblance to the Raven, by the term *Nyctícorax*, or Raven of night; but they would with great propriety have beſtowed this name on that Owl, which is the only one of the Nocturnal Birds whoſe eyes are black, and whoſe plumage is almoſt black, and which in its ſize bears a greater analogy than any other to the Raven.

The probability of this interpretation derives additional force from another conſideration. The *Nyctícorax* was a common and noted bird among the Greeks, and even among the Hebrews, ſince it is often the ſubject of their compariſons *(ſicut nyctícorax in domicilio)*. We cannot imagine with thoſe literati, that this bird was ſo ſolitary and ſo rare, that it can be no longer found. The Aluco is common in every country, it is the largeſt of the Earleſs Owls; the blackeſt and the likeſt the Raven: it differs widely from every other ſpecies; and this obſervation drawn from the fact itſelf, ought to have more weight than the authority of thoſe nomenclators, who are too little acquainted with nature to interpret with accuracy its hiſtory.

But admitting that the *Glaux* ſignifies Tawny Owl, the Earleſs Owl with blue eyes, and *Nyctícorax*, Aluco, or Earleſs Owl with white eyes, the *Ægolios* muſt be the Earleſs Owl with yellow eyes.—This requires ſome diſcuſſion.

Theodore Gaza renders the word *Nyctícorax*, firſt by *Cicuma*, then by *Ulula*, and afterwards by *Cicunia:* this laſt is probably the miſtake of the tranſcribers, who have written *Cicunia* inſtead of *Cicuma*; for Feſtus, prior to Gaza, alſo tranſlated *Nyctícorax* by *Cicuma;* and Iſidorus by *Cecuma*; others by *Cecua.*—To theſe words we may even refer the etymology of *Zueta* in Italian, and *Chouette* in French. If Gaza had attended to the characters of the *Nyctícorax*, he would have adhered to his firſt interpretation, *Ulula*, and would not have made a double application of this term; for he would, in that caſe, have tranſlated *Ægolios* by *Cicuma*. Upon the whole therefore we may conclude, that *Glaux* is the Tawny Owl, *Nyctícorax* the Aluco Owl, and *Ægolios* the Brown Owl.

The *Charadrios*, the *Chalcis*, and the *Capriceps*, ſtill remain to be conſidered: Gaza is contented with giving the Greek words a Latin termination. But as theſe birds are different from thoſe of which we at preſent treat, and ſeem to be the inhabitants of marſhes and the margins of lakes; we ſhall defer the conſideration of the ſubject till we come to the hiſtory of the birds that fiſh in the twilight. The Little Owl is the only ſpecies

ſpecies whoſe name I cannot diſcover in the Greek language. Ariſtotle never mentions it, and probably he confounded it with the Scops, which it indeed reſembles in its ſize, its ſhape, and in the colour of its eyes; and the only eſſential difference conſiſts in the ſmall projecting feather which the Scops has on each ſide of its head.—But we ſhall deſcribe theſe diſtinctions more minutely in the following articles.

Aldrovandus juſtly remarks, that moſt of the miſtakes in Natural Hiſtory ariſe from the confuſion of names, and that the ſubject of Nocturnal Birds is involved in the obſcurity and ſhades of night. What we have now mentioned will, I hope, in a great meaſure diſpel the cloud; and to throw greater light, we ſhall ſubjoin a few remarks. The names *Ule*, *Eule* in German, *Owl*, *Owlet* in Engliſh, *Huette*, *Hulote* in French, are derived from the Latin *Ulula*, which imitates by its ſound the cry of the large kind of Nocturnal Birds. It is probable, as Friſch remarks, that this appellation was firſt appropriated to the Great Earleſs Owl, but was afterwards applied to the ſmall ones, from their reſemblance in form and inſtinct; and at laſt became a general term, comprehending the whole genus. Hence proceeds that confuſion which is but imperfectly remedied by annexing epithets that allude to their haunts, their ſhape, or their cry. For example *Stein-eule* in German, Stone-owl, is the *Chouette*, or the Brown Owl;

Kirch-

Kirch-eule in German, Church Owl, is the French *Effraie*, White Owl, which is alſo named *Schleyer-eule*, Winged Owl, *Perl-eule*, Pearl Owl. *Ohr-eule* in German, Horn Owl, is the *Hibou* of the French (Long-eared). *Knapp-eule*, Nut-cracker Owl, is a name which might have been applied to all the large Owls, which make a noiſe like that action with their bills. *Bubo* in Latin, the *Eagle Owl*, is derived from *Bos*, from the reſemblance of its note to the lowing of an ox. The Germans have imitated the ſound, *uhu*.

The three ſpecies of Earleſs Owls, and the five ſpecies of Eared Owls, which we have now diſtinguiſhed, include the whole genus of the Nocturnal Birds of Prey. They differ from the birds that commit their ravages in the day. 1. By the ſenſe of ſight, which is delicate, and unable to ſupport the glare of light. The pupil contracts in the day-time, but in a manner different from that of cats; for it retains its form, and contracts equally in every direction, while that of cats becomes narrow and extended vertically. 2. By the ſenſe of hearing, which appears to be ſuperior to that of other birds, and perhaps to that of every other animal; for the drum of the ear is proportionally larger than in the quadrupeds, and beſides they can open and ſhut this organ at pleaſure, a power poſſeſſed by no other animal. 3. By the bill, whoſe baſe is not, as in thoſe birds which prey in the day, covered with a thin naked ſkin, but is ſhaded with feathers

thers projecting forward; it is alſo ſhort, and both mandibles are moveable like thoſe of the parrokeets, which is the reaſon that they ſo often crack their bill, and can receive very large morſels, which their wide throat admits to be ſwallowed. 4. By their claws, which have an anterior movable toe, that can be turned backwards at pleaſure, and enables them to reſt on a ſingle foot more firmly and eaſily than others. 5. By their mode of flying, which when they leave their hole, is a kind of tumbling, and is conſtantly ſideways, and without noiſe, as if they were wafted by the wind.—Such are the general diſtinctions between the Nocturnal and Diurnal Birds of Prey: they have nothing ſimilar but their arms, nothing common but their appetite for fleſh and their inſtinct for plunder.

The GREAT-EARED OWL*.

Le Duc, ou *Grand Duc*, Buff.
Strix Bubo, Linn. Gmel. Will. Kram. Briſſ. &c.
Ulula, Klein.
Bubo Maximus, Ger. Orn.
In Italian, *Gufo*, *Duco*, *Dugo*.
In Spaniſh, *Buho*.
In Portugueſe, *Mocho*.
In German, *Uhu*, *Huhu*, *Schuffut*, *Bhu*, *Becghu*, *Huhuy*, *Hub*, *Huo*, *Puhi*.
In Poliſh, *Puhacz*, *Sowalezna*.
In Swediſh, *Uf*.

THE poets have conſecrated the Eagle to Jupiter, and the Great-eared Owl to Juno. It is indeed the Eagle of the night, and the king of that tribe of birds which avoid the light of day, and reſume their activity after the ſhades of the evening deſcend. At firſt ſight it appears as large and ſtrong as the Common Eagle; but it is really much ſmaller, and its proportions are quite different. The legs, the body, and the tail, are ſhorter than in the Eagle; the head much larger; the wings not ſo broad, and do not exceed five feet. It is eaſily diſtinguiſhed by its coarſe figure, its enormous head,

* The Greek name Βυας is perhaps derived from Βους, an *Ox*, from the reſemblance of the cry of the Owl to the bellowing of an Ox. The Latin *Bubo* is ſaid to be formed from *Bufo*, a Toad, which it was ſuppoſed by the vulgar to breed. Does it not come from *Bos*, *Bovis*, an Ox, for the ſame reaſon as the Greek name?

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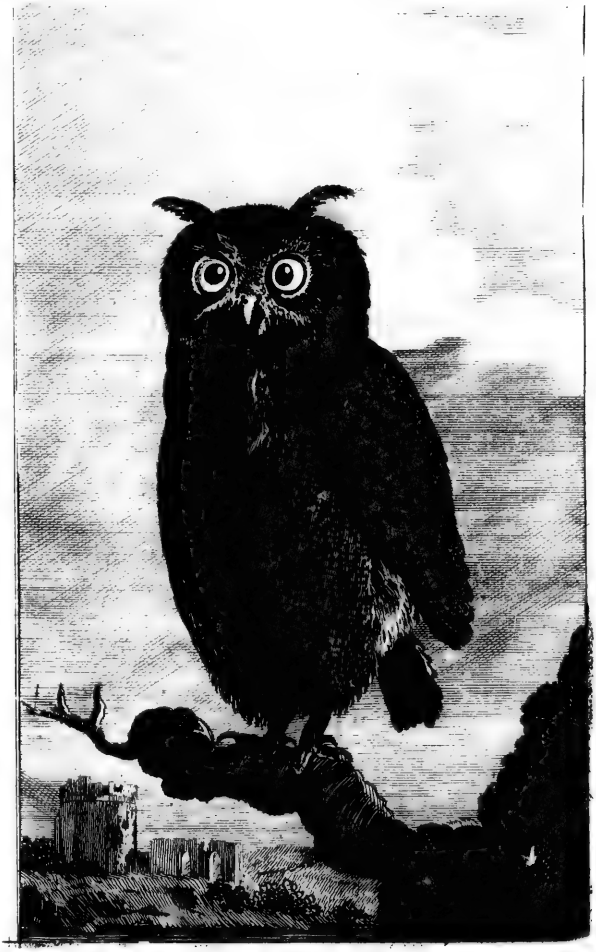

THE EAGLE-OWL.

the broad and deep cavities of its ears, the two tufts which riſe more than two inches and a half on its crown; its bill ſhort, thick, and hooked; its eyes large, ſteady, and tranſparent; its pupils large and black, ſurrounded with a circle of an orange-colour; its face encircled with hairs, or rather ſmall white ragged feathers, which terminate in the circumference of other ſmall frizzled feathers; its claws black, very ſtrong and hooked; its neck very ſhort; its plumage of a ruſty brown, ſpotted with black and yellow on the back, and with yellow on the belly, mottled with black ſpots, and ribbed with a few bars of a brown colour confuſedly intermixed; its feet covered to the claws with a thick down and ruſty feathers*; and laſtly, its frightful cry *hihoo*, *hoohoo*, *boohoo*, *poohoo*†, with which it interrupts the ſilence of the night, when all the other animals enjoy the ſweets of repoſe. It awakens them to danger, diſturbs them in their retreat, purſues them, ſeizes them, or tears them to pieces, and tranſports the fragments to the

* The female differs from the male in nothing except that its plumage is generally darker.

† The following particulars are mentioned by Friſch, in regard to the different cries of the Great-eared Owl, which he kept a long time. "When it was hungry it uttered a ſound like that of the word *Puhu*; if it heard an old perſon cough or hawk, it began very loud, like the laughter of a peaſant in liquor, and continued as long as poſſible without inſpiring." "I ſuppoſe," ſubjoins Friſch, "that this was in the love ſeaſon, and that it took the coughing for the cry of its female: but when it cries through pain or fear, the ſound is exceedingly ſtrong and harſh, though a good deal like that of the birds which prey by day."

caverns

caverns where it fixes its gloomy abode. It haunts only rocks, or old deſerted towers that are ſituated near mountains; it ſeldom ventures into the plains; it declines the boughs of trees, but commonly perches upon ſolitary churches and ancient caſtles. Its prey conſiſts in general of young hares, rabbits, moles, and mice, which it ſwallows entire, digeſts the fleſhy parts, and afterwards throws up the hair, bones, and ſkin, rolled into a ball*; it alſo devours bats, ſerpents, lizards, toads, and frogs, and feeds its young with them. It is ſo active in the breeding ſeaſon, that its neſt is quite crammed with proviſions: it collects more than other birds of prey.

Theſe birds are ſometimes kept on account of their ſingular figure. The ſpecies is not ſo numerous in France as thoſe of the other Owls; and it is not certain whether they remain the whole year in the country. They however neſtle ſometimes in hollow trees, and oftener in

* "I have twice," ſays Friſch, "had Great-eared Owls, and have kept them a long time. I fed them with ox-fleſh and liver, of which they ſwallowed very large bits. If mice were thrown to them they cruſhed the bones with their bill, then ſwallowed them one after another, ſometimes to the number of five. After ſome hours, the hair and bones are collected in the ſtomach, and rejected through the bill. When they can get nothing elſe, they eat ſmall and middle-ſized river-fiſh of every kind; and after the bones are cruſhed and rolled in the ſtomach, they puſh theſe up the throat, and throw them out. They will not drink, a circumſtance which I have obſerved in ſome diurnal birds of prey."—We may obſerve that theſe birds can ſubſiſt without drinking; but they will often drink when they imagine themſelves to be concealed.

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the crags of rocks, or in the holes of lofty old walls. Their neſt is near three feet in diameter, compoſed of ſmall branches of dry wood interwoven with pliant roots, and ſtrewed with leaves. They commonly lay one or two eggs, and but ſeldom three; theſe reſemble ſomewhat the colour of the plumage of the bird, and are larger than hens eggs. The young are very voracious; and the parents are vigilant in providing ſubſiſtence, which they procure in ſilence, and with much more agility than we ſhould ſuppoſe from their extreme corpulence. They often fight with the buzzards, are victorious in the combat, and ſeize the plunder. They ſupport more eaſily the light of day than the other nocturnal birds; for they leave their haunts earlier in the evening, and later in the morning. Sometimes the Great-eared Owl is ſeen attacked by flocks of crows, which accompany his flight and ſurround him by thouſands; he withſtands their onſet*, drowns their hoarſe murmurs with his louder ſcreams, diſperſes them, and often when the light begins to fail he ſeizes ſome fated victim. Though his wings are ſhorter than thoſe of moſt of the birds that ſoar, he can riſe to a great height, eſpecially about twilight; but at other times he generally flies low, and to ſhort diſtances. The Great-eared Owl is employed in falconry to attract the notice of the Kite, and

* Klein.

he is furniſhed with a fox-tail to heighten the ſingularity of his figure. Thus equipped, he ſkims along the ſurface of the ground, and alights on the plain, without venturing to perch upon a tree. The Kite perceives him from a diſtance, and advances not to fight or attack him, but to admire his odd appearance, and generally hovers about unguarded, till he is ſurpriſed by the ſportſman, or caught by the birds of prey that are flown at him. Moſt of the breeders of pheaſants alſo keep a Great-eared Owl, which they place in a cage among the ruſhes in an open place, to draw together the ravens and the crows, which gives them an opportunity of ſhooting and killing a greater number of theſe noiſy birds, ſo alarming to the young pheaſants. To avoid ſcaring the pheaſants, they ſhoot at the crows with a croſs-bow.

With regard to the internal ſtructure of this bird, it has been remarked, that the tongue is ſhort and broad, the ſtomach capacious, the eye incloſed in a cartilaginous coat in the form of a capſule, the brain inveſted with a ſingle coat thicker than that of other birds; and, as in the quadrupeds, there are two membranes which cover the *cerebellum*.

It appears that in this ſpecies there is a firſt variety which includes a ſecond; both are found in Italy, and have been mentioned by Aldrovandus. The one may be called the *Black-winged*

*winged Great-eared Owl**; the ſecond, the *Naked-footed Great-eared Owl* †. The firſt differs from the Common Great-eared Owl only by the colours of its plumage, which is browner or blacker on the wings, the back, and the tail. The ſecond, which reſembles it exactly in the deepneſs of its colour, is diſtinguiſhed by its legs and feet, which are but ſlightly ſhaded with feathers.

Beſides theſe two varieties, which are found in our own climate, there are others which occur in diſtant countries. The White Eagle-Owl of Lapland, mottled with black ſpots, and which is deſcribed by Linnæus, appears to be only a variety produced by the cold of the north ‡. Moſt of the quadrupeds are either white, or ſoon become ſo, within the polar circle, and many birds are ſubject to the ſame change. This bird, which is found in the mountains of Lapland, is white, ſpotted with black; and the difference of colour is what alone diſtinguiſhes it from the Common Great-eared Owl. We may therefore refer it to that ſpecies as a mere variety.

As this bird can bear both heat and cold, it is found in the north and ſouth of both continents;

* This is the firſt variety of the Great-eared Owl in the Linnæan ſyſtem, and the Athenian Horn-Owl of Edwards and Latham.

† This is the ſecond variety of Linnæus, and the Smooth-legged Owl of Latham.

‡ This is the *Strix Scandiaca*, a variety of the *Strix Virginiana* of Linnæus, or *Virginian Eared Owl*.

and not only is the ſpecies ſpread ſo extenſively, but even the varieties. The *Jacurutu** of Brazil, deſcribed by Marcgrave, is exactly the ſame as our Common Great-eared Owl; and one brought from the Straits of Magellan differs little from the European ſpecies. That mentioned by the author of the Voyage to Hudſon's-bay by the name of *Crowned Owl*†, and by Edwards *Eagle Owl* of Virginia, are varieties which occur in America the ſame with thoſe in Europe; for the moſt remarkable difference between the Common Eagle-Owl, and that of Hudſon's-bay and of Virginia‡ is, that the tufts riſe from the bill, and

* "It is equal in bulk to the geeſe; its head is round like that of a cat; the bill thick and black, the upper mandible projecting; the eyes large, prominent, round, and ſhining like cryſtal, within which a yellow circle appears near the margin; near the ears are feathers two inches long, which are erect, and tapering to a point like ears; the tail is broad, and the wings do not reach to its extremity; the legs are clothed with feathers as far as the feet, on which there are four toes, three before and one behind, each of which is furniſhed with a hooked nail that is black, more than an inch long, and very ſharp; the feathers over the whole body are variegated elegantly with yellow, white, and blackiſh." MARCG.

† "The Great-crowned Owl is very common in the country about Hudſon's-bay. It is a very ſingular bird, and its head is ſcarcely ſmaller than that of a cat; what are called its horns are feathers which *riſe preciſely above the bill*, where they are mixed with white, becoming by degrees of a brown red, ſpotted with black." *Voyage to Hudſon's-bay.*

‡ "This bird," ſays Edwards, "is of the largeſt ſpecies of Owls, and much reſembling in bulk the Horned-Owl, which we call the *Eagle-Owl*. Its head is as large as that of a cat. . . . The bill is black; the upper mandible is hooked, and projects beyond the lower, as in the Eagles; it is alſo ſheathed with a ſkin in which the noſtrils are placed, which is covered at the baſe with gray feathers that

and not from the ears. But in the figures of the three Eagle-Owls given by Aldrovandus, the tufts riſe from the ears in the firſt only, or the Common; and in the others, which are but varieties that occur in Italy, the tuft feathers are not inſerted at the ears, but at the baſe of the bill, as in the Eagle-Owl of Virginia deſcribed by Edwards. Klein was therefore raſh in aſſerting, that the Eagle-Owl of Virginia was a ſpecies entirely different from that of Europe. If he had conſulted the figures of Aldrovandus and Edwards, he would have found that this diſtinction, which only conſtitutes a variety, occurs in

that encircle the bill; the eyes are large, and the iris is ſhining and gold-coloured. . . . *The feathers which form theſe horns riſe immediately above the bill*, where they are mixed with a little white; but as they advance above the head they become of a brown red, and terminate with black on the outſide; the upper part of the head, neck, back, wings, and tail, are of a dull brown, ſpotted and intermixed irregularly with ſmall tranſverſe reddiſh or cinereous lines. . . . The part of the throat under the bill is white; ſomewhat lower, orange-yellow, ſpotted with black; the lower part of the breaſt, the belly, the legs, and the under part of the tail, white or pale gray, and pretty regularly croſſed with brown bars; the inſide of the wings is variegated, and coloured in the ſame manner; the feet are covered as far as the nails with feathers of a whitiſh gray, and the nails are of a deep horn colour. . . . I drew this bird after the life in London, whither it was brought from Virginia. I have beſide me another ſtuffed one, which I received from Hudſon's-bay; it appears to me of the ſame ſpecies with the former, being of the ſame ſize, and differing only in the ſhades of its plumage."

I ſhall obſerve that there is only one character which ſeems to imply that this bird is a permanent variety of the Great-eared Owl, viz. that the tufts do not riſe from the ears, but from the baſe of the bill; and as the ſame bird is alſo found in Europe, we may regard it as compoſing a diſtinct family in this ſpecies.

Italy as well as in Virginia, and that in general the tufts of theſe birds do not proceed exactly from the ſide of the ears, but rather from below the eyes, and the upper part of the baſe of the bill. [A]

[A] This article includes two ſpecies of Owls in the Linnæan ſyſtem:—

Firſt, *Strix Bubo*, or the Great-eared Owl, which has a rufous plumage; it is of the ſize of the Eagle; it inhabits Europe, and is found, though rarely, in the north of England, Cheſhire, and Wales. It includes three varieties: firſt, the Athenian Horn-Owl, which is of a darker colour, and has more ſlender feet: ſecondly, the Smooth-legged Owl, whoſe feet are naked: thirdly, the Magellanic Eared Owl, or Jacurutu of Marcgrave, which is duſky-yellowiſh, variegated with white.

Secondly, *Strix Virginianus*, or the Virginian Eared Owl, the Eagle Owl, or Horned Owl. "Its upper part is duſky, variegated with delicate rufous and cinereous lines; below, it is pale cinereous, with duſky tranſverſe ſtreaks; the throat and ſides of the breaſt ſtreaked with duſky orange." It is rather ſmaller than the preceding; it inhabits the north of Aſia, and the whole of America, where, during the night, it makes a hideous noiſe in the woods, not unlike the hallooing of a man, and has often miſled travellers. The Indians dread its ominous preſages, and are provoked at any perſon who mimicks its hooting.

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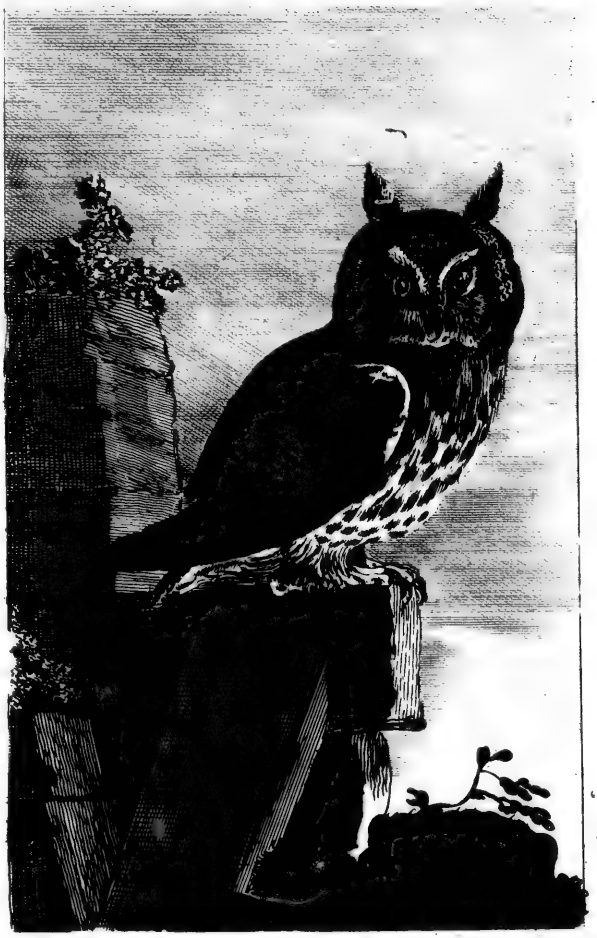

THE LONG EARED OWL.

The LONG-EARED OWL*.

Le Hibou, ou *Moyen Duc*, Buff.
Strix Otus, Linn. Gmel. Will. Kram, &c.
Aſio, Briſſ. and Klein.
Noctua Minor Aurita, Friſch.
Hornoder Obr-eule, Gunth. Neſt.
The Horn Owl, Albin.

THE ears of this bird are very wide, like thoſe of the Great-eared Owl, and covered with a tuft formed of ſix feathers pointing forwards †; but theſe tufts are much ſhorter than thoſe of the Great Owl, and hardly exceed an inch in length; they are however proportioned to its ſize, for it weighs only about ten ounces, and is not larger than a crow. It is therefore a ſpecies evidently different from that of the Great-eared Owl, which is about the bulk of a gooſe; and from that of the Scops, which is not larger than a blackbird, and in which the tufts above the ears are very ſhort. I make this re-

* In Greek it was called Ωτος, from ους, the *ear*; in Latin, *Otus*, or *Aſio*; in modern Italian it is termed *Guſo*, or *Barbagianni*; in Spaniſh, *Mochuelo*; in German, *Ohr-eule (Ear-owl)*, *Kautz-eule*, or *Käutzlein (Coot-owl)*; in Swediſh, *Horn-ugla*; in Poliſh, *Cluk-uocny*, or *Sowa-urſata*.

† Aldrovandus ſays, that he obſerved that each of the feathers in this creſt is ſuſceptible of a ſeparate motion, and that the ſkin which covers the cavity of the ears ariſes from the part of the inſide next to the eye.

mark, becauſe ſome naturaliſts have conſidered theſe as merely varieties of the ſame ſpecies. The Long-eared Owl meaſures about a foot from the point of the bill to the claws; its wings extend three feet, and its tail is five or ſix inches. The upper part of its head, neck, back, and wings, are marked with rays of gray, ruſty, and brown; the breaſt and belly are ruſty, with irregular and narrow brown bars; the bill is ſhort and blackiſh; the eyes of a fine yellow; the feet covered with ruſty-coloured feathers as far as the origin of the claws, which are pretty broad, and of a blackiſh brown. We may alſo obſerve, that the tongue is fleſhy, and ſomewhat forked, the nails very ſharp, the outer claw moveable, and may be turned backwards; the ſtomach capacious, the gall-bladder very large, the guts about twenty inches long, the two *cæcas* two inches and a half deep, and proportionally thicker than in the other birds of prey.

The ſpecies is common, and much more numerous in our climate * than the Great-eared Owl, which ſeldom occurs in winter. The Long-eared Owl is ſtationary during the whole year, and is even found more readily in winter than in ſummer. It commonly lodges in old ruined buildings, in the caverns of rocks, in the hollows of aged trees, in mountain-foreſts, and

* It is more common in France and Italy than in England. It is found very frequently in Burgundy, Champagne, Sologne, and in the mountains of Auvergne.

ſeldom

ſeldom ventures to deſcend into the plains *. When attacked by other birds, it makes a dexterous uſe of its talons and bill; and it even turns on its back when its antagoniſt is too powerful.

It appears that this bird, which is common in our part of Europe, is found alſo in Aſia; for Belon mentions his having met with it in the plains of Cilicia.

This ſpecies admits of ſeveral varieties, the firſt of which occurs in Italy, and has been deſcribed by Aldrovandus. It is larger than the common ſort, and differs in the colour of its pluma[illegible]

These birds ſeldom take the trouble to conſtruct a neſt; for all the eggs and young which I have received were found in the neſts of other birds; often in thoſe of magpies, which it is well known conſtruct a new one every year; ſometimes in thoſe of buzzards; but I could never procure a neſt built by themſelves. They generally lay four or five eggs, and the young, which are at firſt white, acquire their natural colour in the courſe of fifteen days.

As this Owl can ſupport cold, and is found in Sweden † and in France, and paſſes the winter in our latitudes, it could migrate from one continent into the other. It appears that it is found

* "The Gufo (the Long-eared Owl) lodges in grottoes and the hollows of trees, in the crannies and fiſſures of walls, and the roofs of uninhabited houſes, among precipices and in deſert tracts." *Olina Ucceller.*

† Linn. *Faun. Suec.*

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in Canada *, and in many other parts of North America; and probably the Owl of Carolina deſcribed by Cateſby, and that of South America mentioned by Father Feuillée †, are only varieties of our ſpecies, occaſioned by the difference of climates; eſpecially as they are nearly of the ſame ſize, and differ only in the ſhades and diſtribution of their colours.

The Long-eared and Tawny Owls ‡ are employed to attract the birds by their call; and it is obſerved that the large birds more readily obey

* The following paſſage from Charlevoix muſt refer to the Long-eared Owl:—"There is heard almoſt every night in our iſland a kind of Tawny Owl which they call *Canot*, and which utters a mournful cry, as if it hallooed *au canot* (to the canoe), whence its name. Theſe birds are not larger than turtles, but they are exactly ſimilar in their plumage to the Long-eared Owls that are common in France. They have two or three ſmall feathers on both ſides of the head, which look like ears. Sometimes ſeven or eight of them aſſemble on our houſe-tops, and ſcream without interruption the whole night." The ſize here indicated would lead to ſuppoſe that this bird is the Scops; but the projecting feathers of the head ſhew that it is a variety of the Long-eared Owl.—The ſame author adds, that the Tawny Owl of Canada differs from that of France in nothing but in having a peculiar cry, and being furniſhed with a little white ruff about its neck.

† *Bubo ocro-cinereus Pectore Maculoſo*, Feuillée, *i. e.* "The Aſh-coloured Ferruginous-Owl, with a ſpotted breaſt." The *Tecolotl*, which is found in Mexico and New Spain, is perhaps the ſame bird; though this is only conjecture; for Fernandez has given no figure, or full deſcription.

‡ "The Gufo, or Great Nocturnal Owl, is of the ſhape of the Tawny Owl, and about the bulk of a hen, with feathers on the ſides of the head that appear like two horns of a yellow colour, and mixed with a border of black. It ſerves as a call for the large birds, ſuch as all the crows and kites, as the Tawny Owl for every kind of ſmall birds." OLINA.

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the note of the Long-eared Owl, which is a kind of plaintive cry or hollow moaning, *clow̄*, *cloud̄*, inceſſantly repeated during the night; and that the ſmall birds reſort in greater numbers to the invitation of the Tawny Owl, which is louder and a kind of hallooing, *hŏhō*, *hŏhō*. Both theſe in the day-time make ludicrous geſtures in the preſence of men, and other animals. Ariſtotle aſcribes this buffoonery to the Long-eared Owl alone, *Otus*. Pliny beſtows it on the Scops, and terms it *Motus Satyricos* (i. e. *Satiric Movements*). But the Scops of Pliny is the ſame with the *Otus* of Ariſtotle; for the Latins confounded theſe names together, and united them into one ſpecies, qualifying them only by the epithets of *great* and *ſmall*.

What the ancients have related with reſpect to theſe awkward motions and ridiculous geſtures, muſt be principally applied to the Long-eared Owl; and, as ſome philoſophers and naturaliſts have pretended that this was not an Owl, but quite a different bird, which they term the *Lady of Numidia*, I ſhall here diſcuſs the queſtion, and remove the miſtake.

The Anatomiſts of the Academy of Sciences are thoſe to whom I allude; who, in their deſcription of the Lady of Numidia (*Demoiſelle de Numidie*), have endeavoured to eſtabliſh this opinion, and ſtate their reaſons in the following terms:—"The bird," ſay they, "which we de-
"ſcribe, is called the *Lady of Numidia*; becauſe
"it

" it is a native of that part of Africa, and ſeems " to imitate in ſome degree the light air and " ſkip of a lady who affects a graceful motion. " It is more than two thouſand years ſince na- " turaliſts have ſpoken of this bird, and remark- " ed this peculiarity of inſtinct. Ariſtotle gives " it the name of *Juggler*, *Dancer*, and *Buffoon*, " aping what it ſees.—It would ſeem this danc- " ing mimicking bird was rare among the an- " cients, becauſe Pliny believes that it was fa- " bulous, referring this animal, which he calls " *Satyricus*, to the claſs of Pegaſuſes, Griffons, " and Syrens. It has probably been till now un- " known to the moderns, ſince they do not de- " ſcribe it from their own obſervation, but only " from the writings of antiquity, in which it re- " ceived the names of *Scops* and *Otus* from the " Greeks, and *Aſio* from the Latins, and which " they had termed *Dancer*, *Juggler*, and *Comedi- " an;* ſo that it muſt be inquired, whether our " Lady of Numidia is really the *Scops* or *Otus* of " the ancients. The deſcription which they have " given us conſiſts of three particulars:—1ſt, It " imitates geſtures.—2d, It has tufts of fea- " thers on both ſides of the head, like ears. " —3d, The plumage is, according to Alexander " the Myndian, in Athenæus, of a leaden colour. " But all theſe properties belong to the *Lady of " Numidia;* and Ariſtotle ſeems to mark their " manner of dancing, which is that of leaping " the one before the other, when he ſays, that

" they

" they are caught when they dance one oppoſite " to the other. Belon however believes, that " the *Otus* of Ariſtotle is the Owl, for this " only reaſon, that that bird makes many geſ- " tures with its head: but of the tranſlators of " Ariſtotle, who are alſo of our opinion, found " it upon the name *Otus*, which ſignifies having " ears; but they are not peculiar to the Long- " eared Owl; and Ariſtotle evidently ſignifies that " the *Otus* is not the Long-eared Owl, when he " ſays, that the *Otus* reſembles it; and this re- " ſemblance is probably not in regard to the " ears. All the *Ladies of Numidia* which we " have diſſected, had on the ſides of the ears " theſe feathers, which have given occaſion to " the name *Otus* of the ancients.... Their " plumage was of an aſh-colour, ſuch as " is deſcribed by Alexander the Myndian as be- " longing to the *Otus*."

Let us compaare Ariſtotle's deſcription of the *Otus* with that of the Academicians. " The " *Otus* is like the Owl, being furniſhed with " ſmall projecting feathers about the ears, whence " its name, *Otus* or Eared; ſome call it *Ullula*, " others *Aſio*; it is a babbler, a tumbler, and a " mimic, for it imitates dancers. It is caught like " the Owl, the one bird-catcher going round it, " while it is intent upon the other."

The *Otus*, that is, the Long-eared Owl, is like the *Noctua* or Tawny Owl; they reſemble in fact

fact, in their ſize, their plumage and natural habits; both are nocturnal birds of contiguous ſpecies; whereas the *Lady of Numidia* is ſix times thicker and larger, and is of a quite different ſhape, and of a different genus, being by no means a nocturnal bird. The *Otus* differs from the *Noctua* only by the tufts on the head near the ears, and Ariſtotle remarks this diſtinction. Theſe are ſmall feathers, ſtraight and tufted, not the long ones that fall back, and hang from each ſide of the head, as in the *Lady of Numidia*. We cannot therefore refer the word *Otus* to this bird, but evidently to this Long-eared Owl (*Noctua Aurita*); and this inference is confirmed by what Ariſtotle immediately adds, "ſome call it *Ulula*, and others *Aſio*." Nothing therefore is more groundleſs, in my opinion, than the pretended reſemblance which they have endeavoured to trace between the *Otus* of the ancients and the *Lady of Numidia*, the whole o which is founded on ſome ludicrous geſtures and motions which diſtinguiſh this ſprightly bird; but the Long-eared Owl is ſtill entitled to the epithets *Screamer* *, *Mimic*, *Buffoon*. The other character which Ariſtotle mentions, that this bird is eaſily caught, as the other Owls, can only be applied to this bird of night. . . . I might enlarge

* Friſch, ſpeaking of this Owl, ſays, that its cry is very frequent and ſtrong; and he compares it to the hooting of children running to make game of one; but that this cry is common to ſeveral kinds of Owls.

upon this ſubject, and bring paſſages from Pliny to ſupport my criticiſm; but a ſingle remark will remove all doubt. The ludicrous geſtures aſcribed by the ancients to the Long-eared Owl, belong to moſt of the nocturnal birds *; their aſpect is marked with aſtoniſhment, they turn their neck frequently, move their head upwards, downwards, ſideways, crack their bill, tremble with their legs, ſhifting their toe backwards and forwards: theſe geſtures may be obſerved in birds kept in captivity; but unleſs they are caught while young we cannot rear them; for thoſe grown up, obſtinately refuſe all ſuſtenance. [A]

* All the Owls can turn their head like the *Wryneck*. If ſomething uncommon occur, they open their large eyes, briſtle their feathers, and look twice as big; they alſo ſpread their wings, cower, or ſquat, but ſuddenly riſe again as if aſtoniſhed; and twice or thrice they crack their bills. *Id.*

[A] The ſpecific character of the *Long-eared Owl, Strix Otus*, LINN. is, "that the tufts of its ears conſiſt of ſix feathers." It inhabits Europe, America, and the north of Aſia, and is even found in the warm climate of Egypt. It lives in the woods remote from the ſea, near the ſettlement of Hudſon's-bay. It approaches the dwellings, and is very noiſy. It builds in the trees, and never migrates.

The SCOPS-EARED OWL*.

Le Scops, ou *Petit Duc*, Buff.
Strix Scops, Linn. Gmel. Will. Briſſ. Klein.
Hornoder Ohr-eule, Gunth. Neſt.
Chiu, *Alloccarello*, *Chivino*, Zinn.

THIS is the third and laſt ſpecies of the Eared-Owls. It is eaſily diſtinguiſhed from the other two; for its ſize exceeds not that of the black-bird, and the tufts over the ears project only half an inch, and conſiſt of a ſingle feather †:—alſo, its head is much ſmaller in proportion to its body, and its plumage is more elegantly and diſtinctly mottled, being variegated with grey, ferruginous brown, and black, and its legs are clothed to the origin of the nails with feathers of a ruſty grey mixed with brown ſpots. It is diſtinguiſhed alſo by its inſtinct; for in ſpring and autumn it migrates into other climates. It ſeldom paſſes the winter in our provinces, but departs after, and returns a little before, the ſwallows. Though the Scops-eared Owls prefer the high grounds, they crowd where field-mice

* From the Greek Σκωψ, which ſeems to be formed of Σκια, a ſhadow, and Ωψ, the face; probably becauſe it avoids the light.

† "The ears, or ſmall feathers that project like ears, ſcarcely appear in the dead ſubject; they are more obvious in the living animal, and conſiſt of only a ſingle featherlet." ALDROV.

abound,

THE SCOPS OWL.

abound, and are uſeful in extirpating theſe deſtructive animals, which, in ſome years, multiply extremely, and conſume the grain, and deſtroy the roots of plants that are the moſt neceſſary to the ſupport of man. It has been often obſerved, that when this calamity is threatened, the Scops aſſemble in flocks, and make war ſo ſucceſsfully againſt the mice, that in a few days they entirely clear the field *. The Long-eared Owls alſo gather ſometimes to the number of an hundred: and of this fact we have been twice informed by eye-witneſſes; but it ſeldom occurs. Perhaps theſe aſſemblies are formed with the view of beginning a diſtant journey: it is even probable, that they migrate from the one continent into the other: for the Bird of New Spain, mentioned by Nierenberg by the name of *Talchicualti*, is either of the ſame ſpecies, or of one nearly allied to that of the Scops †. But though it travels in numerous flocks, it is ſtill rare and

* Dale, in his appendix to his Hiſtory of Harwich, quotes two inſtances of this from Childrey. "In the year 1580, at Hallow-tide, an army of mice ſo overrun the marſhes near South-Minſter, that they eat up the graſs to the very roots. But at length a great number of *ſtrange painted Owls* came and devoured all the mice. The like happened in Eſſex anno 1648." Dale aſcribes this to the Long-eared Owl, yet the appellation of *ſtrange painted Owls* ſeems to mark the Scops.

†. "The *Talchicualti* ſeems to be a foreign kind of *otus*; it is horned or eared, the body ſmall, the bill ſhort and turned up, the pupil black, the iris yellow black-colour, clothed with duſky and cinereous feathers as far as the legs, which are black and incurvated at the nails. In other reſpects, it is like our *otus*."

not eaſily caught; nor have I been able to procure either the eggs or the young; it was even difficult to inſtruct the ſportſmen to diſtinguiſh it from the Little Owl, becauſe both theſe birds are of the ſame ſize, and the ſhort prominent feathers which form the ſpecific character of the Scops, cannot be perceived at a diſtance.

The colour varies much, according to the age, the climate, and perhaps the ſex; they are all gray when young, but as they grow up, ſome are browner than others; the colour of the eyes ſeems to correſpond to that of the plumage; thoſe that are gray have eyes of a pale yellow, in others the colour is deeper; but theſe differences are ſlight, and ought not to alter the claſſification.

The ALUCO OWL.

La Hulotte, Buff.
Strix Aluco, Linn. Gmel. and Scop.
Ulula, Briſſ. and Will.
Noctua Major, Friſ.
Ulula Vulturina, Klein.
Black Owl, Albin.
Brown Owl *, Penn. and Lewin.

THE Aluco, which may be alſo named the *Black Owl*, and which the Greeks called the *Nycticorax* or *Night Raven*, is the largeſt of all the Owls. It is near fifteen inches long from the point of the bill to the claws; its head is large, round, and without tufts; its face ſunk as it were in the plumage; its eyes are buried in greyiſh ragged feathers; the iris blackiſh, or rather deep brown; the beak of a yellow or greeniſh white; the upper part of the body a deep iron-gray, mottled with black and whitiſh ſpots; the under white, with longitudinal and tranſverſe bars; the tail ſomewhat more than ſix inches, the wings ſtretching a little beyond its extremity, and when [illegible], meaſure three feet; the legs covered to the origin of the nails with white feathers, ſprinkled with black

* In Greek Νυκτικοραξ; in Latin, *Ulula*, from its howling cry; in Italian, *Alocho*; in German, *Huhu*; in Poliſh, *Lelok*, *Sowka*, and *Puſzzik*; in Portugueſe, *Coruſa*.

points *: theſe characters are fully ſufficient to diſtinguiſh the Aluco from all the others; it flies lightly, and not ruſtling with its wing, and always ſideways, like the reſt of the Owls. Its cry †, *hoō, ōō, ōō, ōō, ŏŏ, ŏŏ, ŏŏ*, reſembling the howling of wolves *(ululare)*, was the foundation of its name *ulula* among the Romans; and the ſame analogy has led the Germans to apply the term *hoō, hoō*.

The Aluco lodges during ſummer in the woods, and conſtantly in hollow trees. Sometimes it ventures in winter to approach our habitations; it purſues and catches ſmall birds; but field-mice are its more uſual prey; it ſwallows them whole, and afterwards diſcharges by its bill the ſkins rolled into balls. When it is unſucceſsful in the field, it reſorts to the farm yards and barns, in queſt of mice and rats. It retires early in the morning to the woods, about the time that the hares return to their retreats, and conceals itſelf in the thickeſt copſe, or remains the whole day motionleſs in the foliage of the ſhadieſt trees. During inclement weather, it lodges in hollow trees in the day, and makes its excurſions in the

* We may add a diſtinguiſhing mark, that the uttermoſt feather of the wing is two or three inches ſhorter than the ſecond, and this alſo an inch ſhorter than the third, and that the longeſt of all are the fourth and fifth; whereas in the White Owl, the third one is the largeſt of all, and the uttermoſt is only half an inch ſhorter.

† "This bird howls in the night, eſpecially when it freezes, with ſo gloomy a moan, as to terrify women and children." SALERNE.

night.

night.—Theſe inſtinctive habits are common to it and to the Long-eared Owl, as well as that of depoſiting its eggs in the neſts of other birds, ſuch as the Buzzards, the Keſtrels, the Crows, and Magpies. It generally lays four eggs, of a dirty gray colour, round ſhaped, and nearly as large as thoſe of a ſmall pullet. [A]

[A] The ſpecific character of the Aluco is, that "its head is ſmooth, its body ferruginous, its irides black." It is a native of Europe, and is held ſacred among the Calmuck Tartars.

The TAWNY OWL.

Le Chat-Huant *, Buff.
Strix Stridula, Linn. Gmel. Brun. and Kram.
Noctua Major, Frif.
Strige, Zinn.
The Common Brown or Ivy Owl †, Will. and Alb.

AFTER the Aluco, diſtinguiſhed from the reſt of the Earleſs Owls by its magnitude and its blackiſh eyes, come the Tawny with bluiſh eyes, and the White with yellow eyes. They are both nearly of the ſame ſize; being thirteen inches long from the point of the bill to the claws; ſo that they are only two inches ſhorter than the Aluco, but appear proportionally more ſlender.—The Tawny Owl is diſtinguiſhed by its bluiſh eyes, the beauty and variety of the colours of its plumage, and its cry *hŏhō, hŏhō, höhöhöhŏ*, by which it ſeems to ſhout or halloo with a loud voice.

Geſner, Aldrovandus, and many other naturaliſts after them, have uſed the word *Strix* to diſtinguiſh this ſpecies; but I believe that they

* i. e. The Hooting Cat.

† In Greek, Γλαυξ, from γλαυκος, ſea-green, on account of its colour; in Latin, *Noctua*, being a nocturnal bird; in German, it is termed *Milch Sanger* (Milk Singer), *Kinder* (the Child), *Melcker* (the Milker), and *Stock-Eule* (the Stick Owl).

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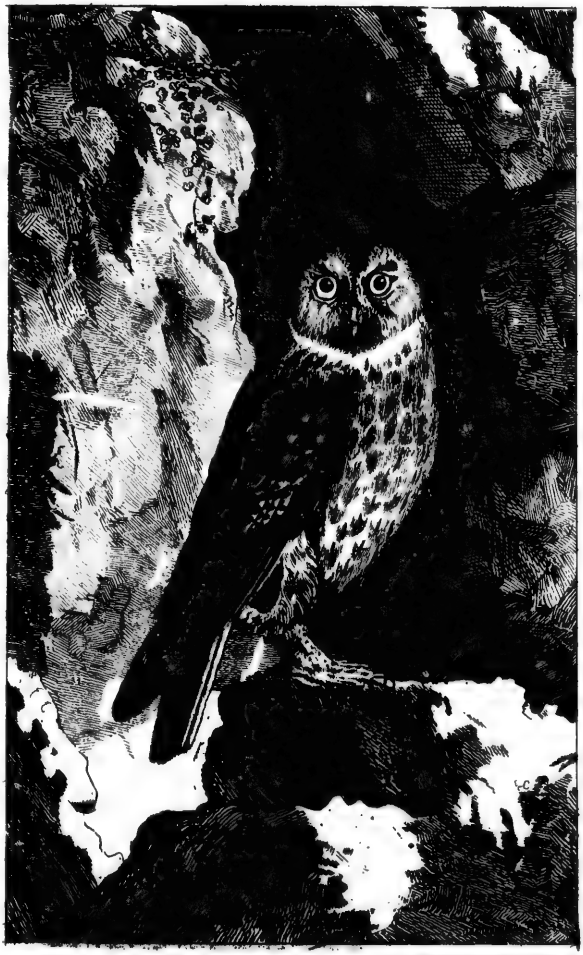

THE TAWNY OWL.

are miſtaken, and that the term ought only to be applied to the White Owl. *Strix* taken in this ſenſe, as denoting a bird of night, muſt be conſidered as rather a Latin than a Greek word. Ovid gives its etymology, and marks with ſufficient preciſion to which of the Nocturnal Birds it ought to be referred, in the following paſſage:

——Strigum
Grande caput, ſtantes oculi, roſtra apta rapinæ,
Canities pennis, unguibus hamus ineſt.
Eſt illis ſtrigibus nomen; ſed nominis hujus
Cauſa quod horrenda ſtridere nocte ſolent *.

A large head, fixed eyes, a bill fitted for rapine, hooked nails, are characters common to all theſe birds; but the whiteneſs of the plumage, *canities pennis*, belongs more properly to the White Owl than to any other; but what in my opinion decides the queſtion is, that the word *ſtridor*, which in Latin expreſſes a grating noiſe reſembling that of a ſaw, marks preciſely the cry *grĕ, grĕi* of the White Owl; whereas the cry of the Tawny Owl is rather a loud hallooing than a creeking noiſe.

* Thus tranſlated by Maſſey—

"Large is their head, and motionleſs their eye,
Hook-billed, ſharp-clawed, and in the duſk they fly.
* * *
Screech-Owls they're called; becauſe with diſmal cry,
In the dark night, from place to place they fly."
Triſti. lib. vi. *ſub init.*

The Tawny Owls are ſcarcely found any where but in the woods. In Burgundy they are more common than the Alucos; they lodge in hollow trees, and I have received ſome in the ſevereſt winters; which fact ſeems to prove that they are ſtationary in the country, and ſeldom approach the habitations of men. Friſch gives the Tawny Owl as a variety of the ſpecies of Aluco, and takes the male for another variety; but if we admit this claſſification, we muſt deſtroy invariable characters, which ſeem to be numerous and diſtinct.

The Tawny Owl is found in Sweden and other northern countries, and hence it has migrated into the continent, or is found in America, even between the tropics. There is in the cabinet of Mauduit a Tawny Owl, which he received from St. Domingo, and which ſeems to be a variety of the European ſpecies, differing only by the uniformity of the colours of its breaſt and belly, which are ferruginous, and almoſt ſpotleſs, and by the deeper ſhades of the upper part of the body. [A]

[A] The ſpecific character of the Tawny Owl, or *Strix Stridula*, LINN. is,—"Its head is ſmooth, its body ferruginous, and the third feather of the wing longer than the reſt." It inhabits the more ſouthern deſerts of Europe and Tartary; and even in England, it is pretty frequent in the woods. It breeds in the rook's neſts. It is not found in Siberia. Weighs nineteen ounces.

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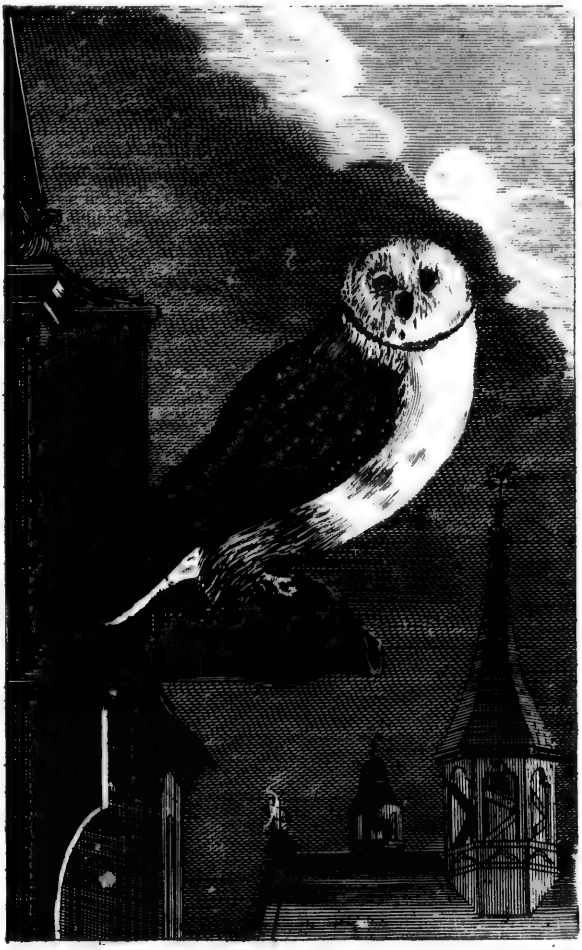

THE WHITE OWL.

The WHITE OWL.

L'Effraie, ou *La Freſaie*, Buff.
Strix Flammea, Linn. Gmel. Mull. and Bor.
Aluco, Briſſ. Ray, Brun. and Klein.
Aluco Minor of Aldrovandus, Will.
Tuidara, Marcgr.
Schläffer Eule, Perle-Eule *, Friſch.

THE White Owl alarms the timid by its blowing notes, *ſhē, ſhēi, ſhēiē*; its ſharp doleful cries, *grĕi, grĕ, crĕi*, and its broken accents which often diſturb the dread ſilence of night. It is in ſome degree domeſtic; it inhabits the moſt populous towns, towers, belfries, the roofs of churches, and other lofty buildings, which afford it retreat during the day. It leaves its haunts about twilight, and continually repeats its blowing, which reſembles the ſnoring of a man which ſleeps with his mouth open. When it flies or alights, it utters alſo different ſharp notes, which are all ſo diſagreeable, that, joined to the awfulneſs of the ſcene, re-echoed from the tombs and the churches in the ſtillneſs and

* The Greek name Ελιος is perhaps taken from the ſame word, which ſignifies *pity*, alluding to its mournful cries; the German appellations allude to its figure and manner of living; *Schleyer-Eule*, Veiled Owl; *Perle-Eule*, Pearled Owl; *Kirch-Eule*, Church Owl; and *Schlaffer Eule*, the Sleepy Owl.

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darkneſs of night, inſpire dread and terror in the minds of women and children, and even of men who are under the influence of the ſame prejudices, and who believe in omens and witches, in ghoſts and apparitions. They regard the White Owl as a funereal bird, and the meſſenger of death; and they are impreſſed with an idea, that if it perches upon a houſe, and utters cries a little different from ordinary, it then ſummons the inhabitant to the tomb.

It is readily diſtinguiſhed from the other Earleſs Owls, by the beauty of its plumage; it is nearly of the ſame ſize with the Tawny Owl, ſmaller than the Aluco, and larger than the Brown Owl, of which we ſhall treat in the following article. Its extreme length is a foot, or thirteen inches; its tail meaſures only five inches; the upper part of its body is yellow, waved with gray and brown, and ſprinkled with white points; the under part white, marked with black ſpots; the eyes regularly encircled with white feathers, ſo ſlender that they might be taken for hairs; the iris is of a fine yellow, the bill white, except the end of the hook, which is brown; the legs covered with white down, the claws white, and the nails blackiſh. There are others which, though of the ſame ſpecies, ſeem at firſt to be very different; in ſome the breaſt and belly are of a fine yellow, ſprinkled with the ſame black points; in others they are

perfectly white; in others they are yellow, and without a ſingle ſpot.

I have had ſeveral alive. They are eaſily caught, by placing a ſmall net at the holes where they lodge in old buildings. They live ten or twelve days in the cages where they are ſhut, but they reject all ſuſtenance, and die of hunger. They continue motionleſs during the day, but mount the top of the rooſt in the night, and whiſtle the note *ſhē, ſhēi*, by which they ſeem to invite the others; and indeed I have often ſeen them attracted by the calls of the priſoner, alight near the cage, make the ſame whiſtling noiſe, and allow themſelves to be caught in the net. I never heard them when confined utter the grating cry *(ſtride) crĕī, grĕī*; this ſound is given only in the flight, when they are in perfect freedom. The female is ſomewhat larger than the male, and the colours of its plumage are lighter and more diſtinct; and of all the nocturnal birds its plumage is the moſt beautifully varied.

The ſpecies of the White Owl is numerous, and very common in every part of Europe. It is alſo found through the whole extent of the continent of America. Marcgrave found it in Braſil, where the inhabitants call it *Tuidara*.

The White Owl does not, like the Aluco and the Tawny Owls, depoſit its eggs in the neſts of other birds. It drops them in the bare holes of walls, or in the joiſts of houſes, and alſo in the hollows of trees; nor does it ſpread roots or leaves

leaves to receive them. It begins early in the ſpring, in the end of March, or the beginning of April. It lays five egs, ſometimes ſix or ſeven, of a longiſh ſhape, and whitiſh colour; it feeds its young with inſects and fragments of mice. They are white at firſt, and are not an unpleaſant meal at the end of three weeks, for they are fat and plump. Their parents clear the churches of the mice; frequently drink or rather eat the oil from the lamps, eſpecially when it has congealed; ſwallow mice and ſmall birds whole, vomiting afterwards the bones, feathers, and ſkin. Their excrements are white and liquid like thoſe of the other birds of prey. In fine weather, moſt of theſe birds viſit the neighbouring woods in the night, but return to their uſual haunts in the morning, and there ſlumber and ſnore till dark, when they ſally from their holes, and fly tumbling almoſt to the ground. In the ſevere ſeaſons five or ſix are ſometimes diſcovered in the ſame hole, or concealed in the fodder, where they find ſhelter, warmth, and food; for the mice are more plentiful then in the barns than at any other time. In autumn they often pay a nightly viſit to the places where the ſprings are laid for the wood-cocks and thruſhes; they kill the wood-cocks, which they find hanging, and eat them on the ſpot; but they ſometimes carry off the thruſhes and other ſmall birds that are caught, often ſwallowing them entire with their feathers, but generally when they

they are larger, plucking them previouſly.—Theſe inſtincts, and that of flying ſideways with ruſtling wings, are common to the White, the Aluco, and the Tawny Owls. [A]

[A] The ſpecific character of the *White Owl*, *Strix Flammea*, LINN. is, that "its head is ſmooth, its body yelloviſh, with white points; below it is whitiſh, with blackiſh points." It is common in England. It is found through Europe and America, but not farther north than the latitude of Sweden. In Tartary it receives divine honours, from a tradition that it was inſtrumental in ſaving the Emperor Zingis Khan; and even at preſent, the Kalmucks have retained the cuſtom of wearing a plume of its feathers on great feſtivals.

The BROWN OWL*.

Le Chouette, ou *La Grande Chevêche*, Buff.
Strix Ulula, Linn. Gmel. Mull. and Georgi.
Ulula Flammeata, Friſch.
Strix Cinerea, Ray, Will. and Browſk.
Noctua Major, Briſſ.
Noctua Saxatilis, Geſn. and Aldrov.
Grey Owl, Will.
Great Brown Owl, Alb.

THIS ſpecies is pretty common, but does not frequent our habitations ſo much as the White Owl. It haunts quarries, rocks, ruins, and deſerted edifices; it even prefers mountainous tracts, craggy precipices, and ſequeſtered ſpots; but it never reſorts to the woods, or lodges in hollow trees. The colour of its eyes, which is a bright yellow, diſtinguiſhes it from the Aluco and the Tawny Owls. The difference is more ſlight between it and the White Owl; becauſe in both, the iris is yellow, ſurrounded with a circle of ſmall white feathers; the under-part of the belly is tinged with yellow; and their ſize is nearly the ſame. But the Brown Owl is of a deeper colour, marked with larger ſpots reſembling ſmall flames; whereas

* Perhaps its Greek name Αιγωλιος is from Αιξ, αιγος, a *goat*, becauſe like that animal it is fond of rocks.—The appellation in German is *Stein-Eule*, for the ſame reaſon. In Poliſh it is called *Sowa*.

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N°27.

THE BROWN OWL.

thoſe of the White Owl are only little points or drops; hence the former has been termed *Noctua Flammeata*, and the latter *Noctua Guttata*. The feet of the Brown Owl are cloſely covered with feathers, and the bill is brown; while the bill of the White Owl is whitiſh, and brown only near the tips. In this ſpecies alſo, the plumage of the female is marked with ſmaller ſpots than the male, and its colours are more dilute. Belon conſiders the White Owl as allied to the Little Owl; and indeed they bear a reſemblance in their figure and inſtincts; and in German they both have the generic name *Kautz (Coot)*. Salerne informs us, that in the province of Orleans the labourers have a great eſteem for this bird, becauſe it deſtroys the field-mice; that in the month of April it utters day and night the ſound *goo* in a ſoft tone; but before rain it changes this note into *goyong*; that it builds no neſt, and lays only three eggs, which are entirely white, perfectly round, and about the ſize of thoſe of a wood-pigeon. He adds, that it lodges in hollow trees, and that Olina was groſsly miſtaken when he aſſerted that it hatches in the two laſt months of winter. The laſt circumſtance, however, is not far from the truth; for this bird, and thoſe of the ſame kind, lay their eggs in March, and the incubation muſt take place about the ſame time. Nor is it caught in hollow trees, but, as we have already ſaid, it haunts the rocks and caverns. It is conſiderably

ſiderably ſmaller than the Aluco, and even than the Tawny Owl, its extreme length being only eleven inches.

It appears that this Brown Owl which is common in Europe, eſpecially in the hilly countries, is alſo found in the mountains of Chili; and that the ſpecies deſcribed by Father Feuillée by the epithet of *Rabbit*, becauſe it was diſcovered in a hole in the ground, is only a variety of the European kind, differing by the diſtribution of its colours. If indeed it had made the excavation itſelf, as Father Feuillée imagines, we muſt conſider it as entirely diſtinct from any Owl even of the ancient continent *. But ſuch a ſuppoſition is unneceſſary; it is moſt likely that, guided by inſtinct, it only crept into holes which it found already formed. [A]

* Father du Tertre, ſpeaking of a nocturnal bird called the *devil* in our American iſlands, ſays, that it is as large as a duck; that its aſpect is hideous; its plumage mixed with white and black; and that it lives on the higheſt mountains; that it *burrows* like a rabbit in the holes which it makes in the ground, where it lays its eggs, hatches, and raiſes its young. . . . that it never deſcends from the mountains, except in the night; and, when it is on the wing, it utters a melancholy frightful cry.—This is certainly the ſame bird with the one mentioned by Feuillée, and with the Brown Owl.

[A] The ſpecific character of the Brown Owl, or *Strix Ulula*, given by Linnæus, is, "That the upper part of its body is duſky, with white ſpots; the tail-feathers inſcribed with white lines."—The deſcription of Latham is more accurate and complete: "Its head is ſmooth; the upper part of the body is tawny, with duſky longitudinal ſpots; below whitiſh with duſky lines; the tail marked with duſky bars." It is fifteen inches and a half long, and weighs fourteen ounces. It is not common in England. It includes two varie-

varieties: 1. *The Arctic Owl, Strix Artica*, of which the body is ferruginous above, with black ſpots; and the orbits, the bill, and a bar under the wings, are black. It inhabits the northern parts of Sweden. It is eighteen inches long.—2. *The Caſpian Owl, Strix Accipitrina*, of which the upper part of the body is ſlightly yelloviſh; and below it is yelloviſh white, with blackiſh longitudinal ſpots. It inhabits the Caſpian Sea, the ſouthern parts of Ruſſia and Tartary, and occupies deſerted neſts.

The LITTLE OWL*.

La Chevêche, ou *Petite Chouette*, Buff.
Strix Paſſerina, Linn. Gmel. Scop. Brun. Mul. Kram, &c.
Noctua Minor, Ray, Will. and Klein.
La Civetta, Olin. and Zinn.

THE Little Owl and the Scops Owl are nearly of the ſame ſize, both being the ſmalleſt of the genus. They are ſeven or eight inches long from the point of the bill to the claws, and not larger than a blackbird; but they are ſtill a diſtinct ſpecies; for the Scops is furniſhed with very ſhort ſlender tufts, conſiſting of a ſingle feather on each ſide of the head, which are entirely wanting in the Little Owl: beſides, the iris is of a paler yellow, the bill brown at the baſe, and yellow near the point; but that of the Scops is entirely black. It may be readily diſtinguiſhed by the difference of colours, by the regular diſpoſition of the white ſpots on the wings and the body, by the ſhortneſs of its tail and wings, and by its ordinary cry, *poöpoö*, *poöpoö*, which it conſtantly reiterates

* The Greeks and Romans ſeem to have had no name appropriated to this ſpecies; and probably they confounded it with the Scops Owl, or *Aſio*. This is the caſe in the modern languages: both are termed *Zuetta* or *Civetta* in Italian; *Sechuza* in Spaniſh; *Mocho* in Portugueſe; *Kautzlein* in German; and *Szorva* in Swediſh.

while

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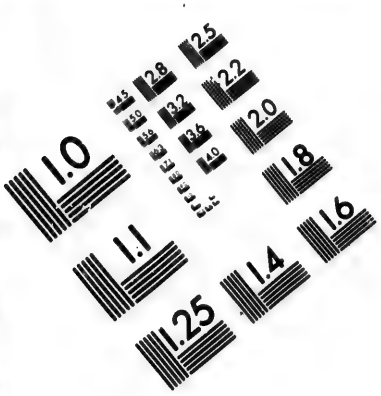
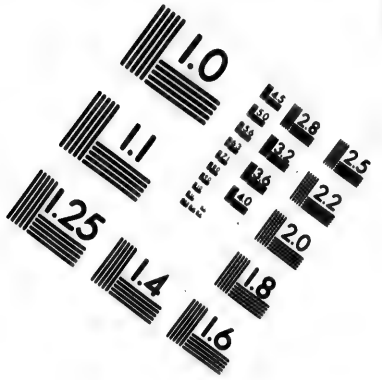
THE LITTLE OWL.

while it flies; and another note which it has when ſitting, and which reſembles the voice of a young man, who repeatedly calls *aīmĕ*, *hēmĕ*, *ēſmĕ* *. It ſeldom haunts the woods; but its ordinary abode is among ſolitary ruins, caverns, and old deſerted buildings, and it never lodges in hollow trees. In all theſe reſpects it reſembles moſt the Brown Owl. Nor is it entirely a bird of night; but ſees much better in the day than the other nocturnal birds, and even chaces the ſwallows and other ſmall birds, though with very little ſucceſs. It is more fortunate in the ſearch for mice, which it ſwallows, not entire, but tears them in pieces with its bill and claws; and it even plucks the birds neatly before it eats them; and in this inſtinct it differs from the other Owls. It lays five eggs, which are ſpotted with white and yellow, and conſtructs its rude, and almoſt bare neſt in the holes of rocks, and old walls. Friſch obſerves, that this bird loves ſolitude, and haunts churches, vaults, and cemeteries, the reſidence of the dead; that it is ſometimes called *Church-Owl*, *Corpſe-Owl*; and that as it has been remarked to flutter about houſes where there were perſons dying, the ſuperſtitious people name it *the*

* Happening to ſleep in one of the old turrets in the caſtle of Montbard, a Little Owl alighted on the window-frame, and before day-break, at three o'clock in the morning, awakened me with its cry, *hēmĕ*, *ēdmĕ*. As I was liſtening to this ſound, which was the more remarkable as it was cloſe beſide me, I heard one of my ſervants who ſlept in the room over mine open the window, and deceived by the reſemblance of the ſcream *ēdmĕ*, call out, *Who's there below? my name is not Edme, it is Peter.*





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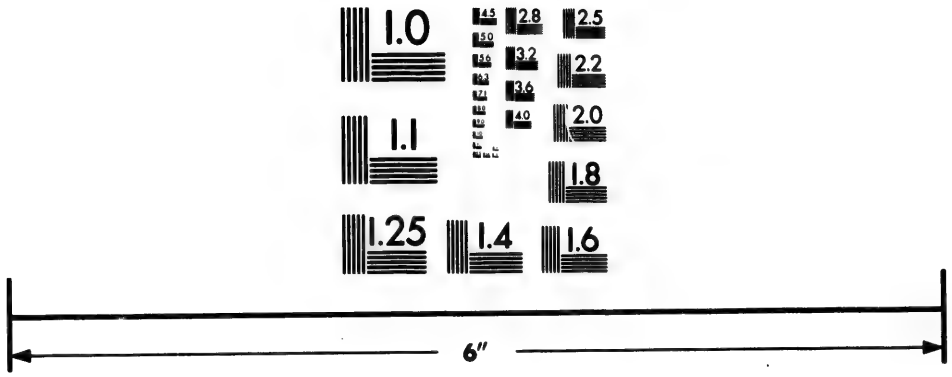

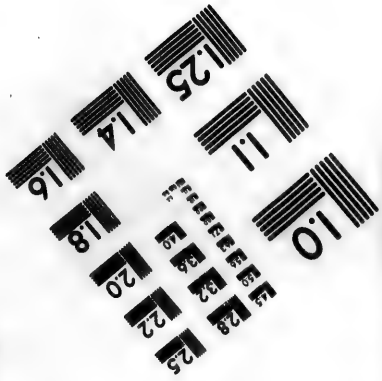

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bird of death, and imagine that it portends approaching diſſolution. Friſch does not reflect that theſe gloomy images are connected only with the White Owl, and that the Little Owl is much more rare; that it hovers not about churches, nor has the plaintive moan or the piercing intimidating cry of the other. At any rate, if the Little Owl be reckoned *the bird of death* in Germany, it is the White Owl that is held ominous in France. The Little Owl which Friſch has figured, and which occurs in Germany, appears to be a variety of ours: its plumage is much darker, and its iris black. There is alſo a variety in the king's cabinet, which was ſent from St. Domingo, and which is not ſo white on the throat, and whoſe breaſt and belly are regularly marked with brown tranſverſe bars; while, in our Little Owl, the brown ſpots are ſcattered confuſedly.

It may be proper to preſent a clear conciſe view of the diſtinguiſhing characters of the five ſpecies of Earleſs Owls, of which we have treated. 1. The Aluco is the largeſt; its eyes are black; it may be termed *The Large Black Earleſs Owl with Black Eyes.* 2. The Tawny Owl is much ſmaller than the Aluco; its eyes blueiſh; its plumage ruſty, tinged with iron-grey; the bill greeniſh white; and may be named *The Ruſty and Iron-grey Earleſs Owl*

Owl with Blue Eyes. 3. The White Owl is nearly of the ſame ſize with the Tawny; its eyes yellow; its plumage whitiſh yellow, variegated with very diſtinct ſpots; the bill white, and the end of the hook brown; and may be called *The White or Yellow Earleſs Owl with Orange-Eyes.* 4. The Brown Owl is not ſo large as the Tawny or White, but nearly as thick; its plumage brown; its eyes of a fine yellow; its bill brown; and may be termed *The Brown Earleſs Owl, with Yellow Eyes and a Brown Bill.* 5. The Little Owl is much ſmaller than the others; its plumage brown, regularly ſpotted with white; its eyes pale yellow; its bill brown at the baſe, and yellow at the point; and may be called *The Little Brown Earleſs Owl, with Yellowiſh Eyes, and a Brown and Orange Bill.*

Theſe characters apply in general; but, as in every other part of Nature, they are ſometimes liable to conſiderable variations, eſpecially in the colours; enough, however, has been ſaid to diſtinguiſh them from each other. [A]

[A] The ſpecific character of the Little Owl, *Strix Paſſerina*, is "That its head is ſmooth, and the feathers of its wings marked with five orders of ſpots." It is very rare in England. In North America it is found from Hudſon's-bay to New York, and called by the Eſquimaux *Shipmoſpitl.* They build always in the pines, and in the middle of the tree, and lay two eggs; remain ſolitary in their retreat in the day, but are active in the ſearch of their prey during the night.

FOREIGN BIRDS,
WHICH RESEMBLE THE OWLS.

I.

THE bird named *Caboor* by the Indians of Brazil, which has tufts of feathers on its head, and which is not larger than the Juniper Thruſh. Theſe two characters ſufficiently ſhew it as a ſpecies of the Scops, if not a variety of the ſame ſpecies. Marcgrave is the only perſon who has deſcribed it, but he gives no figure of it; it is a kind of Owl, ſays he, of the ſize of a fieldfare; its head round; its bill ſhort, yellow, and hooked, with two holes for the noſtrils; the eyes beautiful, large, round, and yellow, with a black pupil; under the eyes, and on the ſide of the bill, are long brown hairs; the legs are ſhort, and they, as well as the feet, are clothed completely with yellow feathers; the toes commonly four in number, with nails that are ſemilunar, black and ſharp; the tail broad, the wings terminating at its origin; the body, the back, the wings, and the tail, are of a pale duſky colour, marked on the head and neck with very ſmall white ſpots, and on the wings with larger ſpots of the ſame colour; the tail is waved with white; the breaſt and belly of a whitiſh-grey, clouded with light brown. Marcgrave adds, that

that this bird is eaſily tamed; that it can bend its head, and ſtretch its neck ſo much as to touch with the point of its bill the middle of its back; that it frolics with men like a monkey, and makes ſeveral antic motions; that it can erect the tufts on the ſides of its head ſo as to repreſent ſmall horns or ears; and that it feeds upon raw fleſh. This deſcription proves that it approaches nearly to the European Scops; and I am almoſt inclined to believe that the ſame ſpecies inhabits the Cape of Good Hope. Kolben informs us, that the Owls of the Cape are of the ſame ſize with thoſe in Europe; that their feathers are partly red, partly black, with a mixture of grey ſpots, which give them a beautiful appearance; that ſeveral Europeans who live at the Cape tame them, and allow them to run about their houſes, and employ them for deſtroying the mice. Though this deſcription be not ſo complete as that of Marcgrave, and does not warrant an abſolute concluſion, there is, however, a ſtrong preſumption from the reſemblance of the properties of theſe birds, and from the ſimilarity of the climates of Brazil and the Cape of Good Hope, that the two Owls are of the ſame ſpecies. [A]

[A] The *Cabure* is the *Braſilian-eared Owl* of Latham; the *Strix Braſilienſis* of Gmelin; the *Aſio Braſilienſis* of Briſſon; the *Noctua Braſilienſis* of Ray; and the *Ulula Braſilienſis* of Klein. Its ſpecific character: "Its head eared; its body duſky-ferruginous, ſpotted with white; below whitiſh, with duſky ferruginous ſpots; the tail-feathers ſtriped with white."

II.

The bird of Hudſon's Bay, called in that part of America *Caparacoch*; of which Edwards has given an excellent deſcription and figure, and which he has named, *The Little Hawk-Owl*, becauſe it participates of the nature of both theſe birds, and ſeems to be an intermediate ſhade. It is ſcarcely larger than the *Sparrow-hawk*, and the length of its wings and tail give it a ſimilar appearance. The ſhape of its head and feet however ſhews, that it is more nearly allied to the genus of Owls; but it flies and catches its prey in broad day, like the other rapacious diurnal birds. Its bill is like that of the Sparrow-hawk, but not cornered on the ſides; it is gloſſy and orange-coloured, covered almoſt entirely with hairs, or rather ſmall ragged grey feathers, like moſt of the Owls; the iris is orange, the eyes encircled with white, and ſhaded with a little brown, ſpeckled with ſmall longiſh duſky ſpots, and on the outſide of this white ſpace is a black ring, which extends as far as the ears; beyond this black circle there is again ſome white; the crown of the head is deep brown, mottled with ſmall white round ſpots; the arch of the neck and its feathers, as far as the middle of the back, are of a dull brown, edged with white; the wings are brown, and elegantly ſpotted with white; the ſcapular feathers are barred tranſverſely with white and brown; the three feathers next the

the body are not ſpotted, but only bordered with white; the lower part of the back and the rump are of a deep brown, with tranſverſe ſtripes of lighter brown; the lower part of the throat, the breaſt, the belly, the ſides, the legs, the rump, and inferior coverts of the tail, and the ſmaller inferior coverts of the wings, are white, with brown tranſverſe ribs, but the larger coverts of the wings are of an obſcure aſh-colour, with white ſpots on the two edges; the firſt of the quill-feathers of the wing is entirely brown without the leaſt ſpot or border of white, and is not in the leaſt like the reſt of the quill-feathers, as may be remarked alſo in the other owls; the feathers of the tail are twelve in number, of an aſh-colour below, and a dull brown above, with white narrow tranſverſe bars; the legs and feet are covered with fine ſoft feathers, white like thoſe of the belly, barred with ſhorter and narrower brown lines; the nails are hooked, ſharp, and of a deep brown colour. [A]

Another individual of the ſame kind was a little larger, and its colours more dilute, which affords a preſumption, that what has been deſcribed is a male, and the other a female. They were brought from Hudſon's Bay to Edwards, by Light.

[A] This is *Strix Funerea* of Linnæus and Muller, and the *Strix Canadenſis* of Briſſon, and the *Canada Owl* of Latham. It flies high like a hawk, and preys by day upon the White Grouse. It attends the fowler, and often ſteals the game before he has time to pick it up. It is found in North America, in Denmark, and Sweden, and is very frequent in Siberia.

III.

The HARFANG.

This bird inhabits the northern parts of both continents, and is known by this name in Sweden. It is not furniſhed with tufts on the head, and it is ſtill larger than the Great-eared Owl. Like moſt northern birds, its colour is ſnowy-white. But we ſhall borrow the excellent deſcription which Edwards has given of this rare bird, which we could not procure.

" The Great White Owl," ſays this author, " is one of the largeſt of the Nocturnal Birds " of Prey, and at the ſame time it is the moſt " beautiful, for its plumage is white as ſnow: " its head is not ſo large in proportion as that " of the Owls; its wings when ſpread, meaſure " ſixteen inches from the ſhoulder to the end of " the longeſt feather, which may give an idea of " its bulk. It is ſaid to prey in open day upon " the White Grous about Hudſon's Bay, where " it remains the whole year. Its bill is hooked " like a hawk's, and has no corners on the edges; " it is black, and perforated with wide noſtrils, and " is alſo almoſt entirely covered with ſtiff feathers, " ſimilar to the briſtles at the baſe of the bill, and " reflected outwards. The pupil is encircled by " a brilliant-yellow iris; the head, the body, " the wings, and the tail are marked with ſmall

" brown

" brown ſpots. The higher part of the back " is tranſverſely barred with ſome brown lines, " the ſides below the wings are alſo barred in " the ſame manner, but by narrower and lighter " lines: the great feathers of the wings are ſpot- " ted with brown on their outer edges; there " are ſpots alſo on the coverts of the wings, " but the inferior coverts are pure white. The " legs and feet are covered with white feathers; " the nails are long, ſtrong, black, and very " ſharp." " I have another ſpecimen of the ſame " bird, (Edwards ſubjoins,) " in which the ſpots " are more frequent, and the colour more in- " tenſe."

This bird is common in the country about Hudſon's Bay; but it ſeems to be confined to the northern tracts; for in the New Continent it is very rare; in Pennſylvania and in Europe it never appears farther ſouth than Dantzick. It is almoſt white, and ſpotleſs in the mountains of Lapland. Klein informs us, that it is named Hûrfang in Sweden, and *Weiſſebunte Schlictete-eule* (i. e. White-chequered Smooth Owl) in Germany, and that he had in Dantzick a male and female alive for ſeveral months in 1747*. Ellis

* *White Owl with earthy ſpots. Hûrfang*, Swed.; *Weiſſebunte Schlichtete-eule*, Germ. On the 3d January 1747, I gave a ſtuffed ſpecimen to the cabinet of the Society of Gûar. When alive it weighed three pounds and a half. The length from the point of the bill to the end of the tail was one ell and a ſixteenth, the alar extent two and three-fifths; the bill and nails black; the cheeks, the lower part of the wings, the rump and the legs covered with a milky ſhag; the upper part of the body marbled with white and cinereous.

relates

relates that this bird and the Great-eared Owl are frequent in the tracts near Hudſon's Bay: it is, ſays he, of a dazzling white, hardly diſtinguiſhable from ſnow; it appears the whole year, flies often in open day, and hunts white partridges (*grous*). On the whole, therefore, the Harfang, which is the largeſt of all the Owls, is moſt frequent in the northern regions*, and probably avoids the heats of the ſouth. [A]

* We have ſeen that it inhabits Lapland, Sweden, and the North of Germany: it is alſo found in Pennſylvania and Hudſon's Bay, probably in Iceland; for Anderſon has given a figure of it in his deſcription of Iceland; and though Horrebow, who has criticiſed that work, aſſerts that no kind of Owl is found there, yet this ought not to be admitted upon the ſingle credit of one whoſe principal aim it ſeems is to contradict Anderſon.

[A] This is the *Strix Nyctea* of Linnæus, &c. the *Ulula Alba* of Klein, the *White Owl of Hudſon's Bay* of Briſſon, the *Great White Owl* of Edwards, and the *Snowy Owl* of Pennant and Latham.—The ſpecific character, "the head ſmooth, the body whitiſh, with duſky lunar ſpots diſperſed."

IV.

The CAYENNE OWL†.

Le Chat-huant de Cayenne, Buff.
Strix Cayanenſis, Gmel.

This bird has been deſcribed by no naturaliſt. It is of the ſize of the Tawny Owl, from

† Specific character: "The body ſtriated with rufous, waved tranſverſely with duſky colour; the irides yellow."

which

which it differs by the colour of its eyes, which are yellow; ſo that it is perhaps equally related to the White Owl, but really differs from both. It is particularly remarkable for its rufous plumage, waved tranſverſely with brown narrow lines, not only on the breaſt and belly, but even on the back; its bill is of a fleſh colour, and its nails black.—This deſcription, with the inſpection of the figure, will be ſufficient to recogniſe it.

V.

The CANADA OWL*.

La Chouette, ou *Grande Chevêche de Canada*, Buff.
Strix Funerea, Linn.

This is conſidered by Briſſon as a ſpecimen of the Tawny Owl, but it appears to be more allied to the Brown. It differs from the latter, however, becauſe its breaſt and belly are marked with regular brown croſs bars; and this ſingular property is alſo obſerved in the Little Owl of America.

* Specific character:—"The head ſmooth, the body duſky ſpotted with white, ſtreaked below with white and duſky, the wing feathers variegated with white ſpots, the tail feathers ſtreaked with white." Its length ſeventeen inches, and its alar extent two feet. It weighs twelve ounces.

VI. The

VI.

The SAINT DOMINGO OWL*.

La Chouette, ou *Grande Chevêche de Saint-Domingue,* Buff.
Strix Dominicenſis, Gmel.

This bird was ſent us from St. Domingo, and ſeems entirely a new ſpecies. It is the neareſt related to the Brown European Owl. Its bill is larger, ſtronger, more hooked than that of any other Earleſs Owl. It differs from the Brown Owl in another circumſtance alſo; its belly is of a ruſty uniform colour, and there are only ſome longitudinal ſpots on the breaſt; whereas the Brown Owl of Europe is marked on the breaſt and belly with large oblong pointed ſpots, which has given occaſion to the name of *Flaming Owl. Noctua flammeata.*

* Specific character:—"The head ſmooth, the abdomen rufous, the breaſt marked with ſtraggling longitudinal ſpots."

BIRDS

WHICH HAVE NOT THE POWER OF FLYING.

FROM the light birds which ſoar in the region of the clouds, we paſs to thoſe that are borne down by their weight, and cannot riſe from the ſurface. Our tranſition is ſudden; but knowledge is acquired in the mode of compariſon, and the oppoſition and contraſt will throw additional light on the hiſtory of the winged race. Indeed, without examining cloſely the end of the chain, we cannot diſtinguiſh the intermediate links. When Nature is diſplayed in her whole extent, ſhe preſents a boundleſs field, where the various orders of being are connected by a perpetual ſucceſſion of contiguous and reſembling objects: but it is not a ſimple uniform ſeries, it ramifies at intervals in all directions; the branches from different parts bend, and run into each other, and theſe flexions and this tendency to unite, are moſt remarkable near the extremes. We have ſeen in the claſs of quadrupeds, that one end of the chain ſtretches to the tribe of birds in the different kinds of bats, which like theſe have the power of flying. The other end of the chain, we have perceived, deſcends to the order of whales, in the ſeal, the

wallrus, and the *manati*: another branch was obſerved riſing from the middle, and connecting the monkey to man by the intermediate links of the baboon, the pigmy-ape, and the orang-utang. On the one ſide, a ſhoot bending through the *ant-eaters*, the *phatagins*, and the *pangolins*, which reſemble in ſhape the crocodiles, the *inguana*, and the lizzards, unites the reptiles to the quadrupeds; on the other, through the *tatous*, whoſe body is completely ſheathed in a bony covering, it approaches the cruſtaceous animals. It will be the ſame with reſpect to the band which connects the numerous order of birds; if we place its origin in thoſe birds which ſhoot nimbly with light pinions through the mid-way air, it will gradually paſs through various minute ſhades, and at laſt terminate in thoſe which are oppreſſed with their weight, and deſtitute of the inſtruments neceſſary to impel their aërial courſe. The lower extremity will be found to divide into two branches; the one containing terreſtrial birds, as the Oſtrich, the Touyou, the Caſſowary, and the Dodo, which cannot riſe from the ground; the other including the Pinguins and other aquatic birds, which are denied the uſe, or rather the reſidence of earth and air, and which never leave the ſurface of the water, their proper element. Such are the ends of the chain; and we ought to examine theſe with attention before we venture to ſurvey the intermediate links, in which the proper-

ties of the extremes are variouſly blended. To place this metaphyſical view in its proper light, and to elucidate the ideas by actual examples, we ought, immediately after treating of quadrupeds, to begin the Natural Hiſtory of the Birds which are the neareſt related to theſe animals. The Oſtrich reſembling the camel in the ſhape of its legs, and the porcupine in the pipes or prickles with which its wings are armed, ought to be ranged next the quadrupeds. But philoſophy muſt often yield to popular opinions; the numerous herd of naturaliſts would exclaim againſt this claſſification, and would regard it as an abſurd innovation, proceeding merely from the love of ſingularity and contradiction. But beſides the general reſemblance in ſize and outward appearance, which alone ought to place it at the head of the winged race, we ſhall find that there are many other analogies to be found in the internal ſtructure; and that being almoſt equally related to the birds and to the quadrupeds, it muſt be conſidered as the intermediate ſhade.

In each ſeries or chain which connects the univerſal ſyſtem of animated nature, the branches which extend to the ſubordinate claſſes are always ſhort, and form very ſmall *genera*. The birds that are not fitted to fly, conſiſt only of ſeven or eight ſpecies; the quadrupeds that are able to fly, amount but to five or ſix. The ſame remark may be applied to the other lateral

ramifications. Theſe are fugitive traces of nature, which mark the extent of her power, which ſet defiance to the ſhackles of our ſyſtems, and burſt from the confinement of our narrow circle of ideas.

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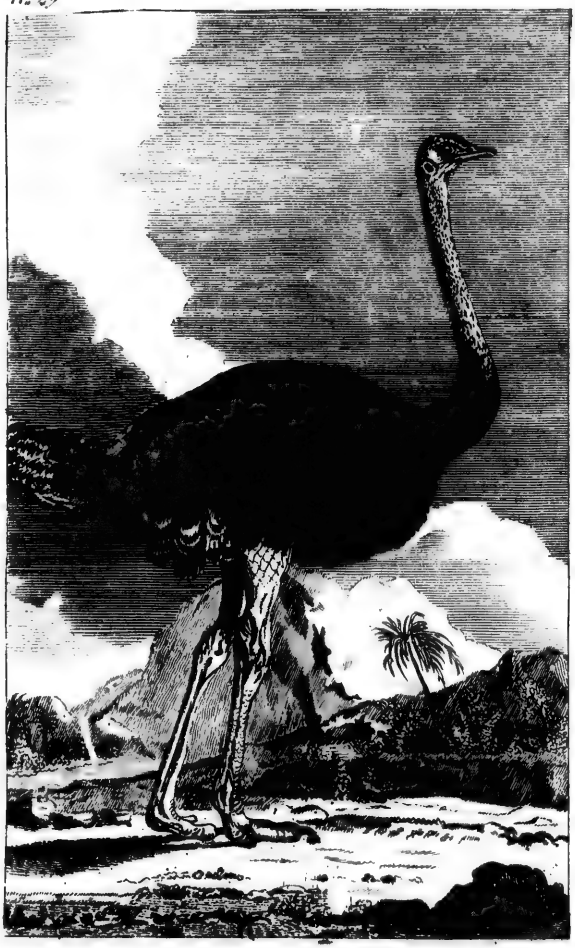

THE OSTRICH.

The OSTRICH*.

L'Autruche, Buff.
Struthio Camelus, Linn. Gmel. Will. Briſſ. &c.
The Black Oſtrich, Alb. Sparr. Lath. &c.

THE Oſtrich was known in the remoteſt ages, and mentioned in the moſt ancient books. It is frequently the ſubject from which the ſacred writers draw their compariſons and allegories †. In ſtill more diſtant periods, its fleſh

* The Greek appellation Στρουθοκαμηλος, or ſimply Στρουθος, is derived from στρουθος, which ſignifies a *ſparrow*, or a bird in general; and καμηλος, a *camel*; on account of the reſemblance which the Oſtrich bears to that quadruped. The ſame terms were introduced into Latin; *Struthocamelus*, and ſometimes *Struthio*. In Hebrew it was called *Jacuah*; in Arabic, *Neamah*; in Spaniſh it is now termed *Ave-Struz*; in Italian, *Struzzo*; in German, *Strauſs*.

Linnæus ranges the Oſtrich, the Galeated Caſſowary, and the Touyou, in the ſame genus *Struthio* among the *Gallinæ*. The ſpecific character of the Oſtrich is, that it has three toes. Mr. Latham in his laſt work, *Index Ornithologicus*, has very properly formed another order, that of *Struthiones*, inſerted after the *Grallæ*, and which contains the *genera* of the Dodo, the Toyou, the Caſſowary, and the Oſtrich. The character of the laſt: that its *bill* is ſtraight, depreſſed and rounded at the end; the *wings* ſhort, and uſeleſs for flying; the *thighs* naked above the knees; and two toes both turned forward.

† *Oſtriches ſhall dwell there, and the Satyrs ſhall dance there.* ISAIAH, xiii. 21.

* *Even dragons draw out the breaſts, and give ſuck to their young; but the daughters of my people become cruel like the Oſtriches in the wilderneſs.* LAMENTAT. iv. 3.

I will make lamentation like the dragons, and mourning like the Oſtriches. MICAH, i. 8.

ſeems to have been commonly uſed for food; for the legiſlature of the Jews prohibits it as unclean *. It occurs alſo in Herodotus †, the moſt antient of profane hiſtorians, and in the writings of the firſt philoſophers who have treated of the hiſtory of Nature: how indeed could an animal ſo remarkably large, ſo ſtrangely ſhaped, and ſo wonderfully prolific, and peculiarly fitted for the climate, as the Oſtrich, remain unknown in Africa and part of Aſia, countries peopled from the earlieſt ages, full of deſerts indeed, but where there is not a ſpot that has not been trodden by the foot of man?

The family of the Oſtrich, therefore, is of great antiquity; nor in the courſe of ages has

* "And theſe alſo ſhall have abomination among fowls.... the Oſtrich alſo, and the Cormorant," &c. LEVIT. xi. 13 & 16.

"But theſe are they whereof you ſhall not eat.... nor the Oſtrich, nor the night-crow," &c. DEUT. xiv. 12 & 15.

† Salerne is of opinion that Herodotus ſpeaks of three kinds of Στρουθοι: the *aquatic*, or *marine*, which is the fiſh called plaice; the *aerial*, which is the ſparrow; and *the terreſtrial* (Καλλαγαιος) which is the Oſtrich. I can diſcover only the laſt, and I ſhould render the epithet Καλλαγαιος differently, *ſubterranean*; not that I believe in the exiſtence of ſuch Oſtriches; but Herodotus is there deſcribing the ſingular productions peculiar to a certain region of Africa. The common Oſtrich was unlikely to be ſelected, ſince the Greeks knew it was common in Africa; and the fancy or credulity of the antient hiſtorian might create or aſſume thoſe ideal beings.

Nor is it probable that ſo rich, ſo preciſe, and ſo finiſhed a language as the Greek, would aſſign the generic name of Oſtrich to a bird or a fiſh. If I were allowed to offer a conjecture, I ſhould ſay that the *Aerial Struthos* was the Long-tailed Oſtrich, which in ſeveral parts of Africa is at preſent called *The Flying Oſtrich*; and I ſhould ſuppoſe that the *Aquatic Struthos* was ſome heavy water-fowl whoſe wings were unfit for flying.

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it varied or degenerated from its native purity. It has always remained on its paternal eſtate; and its luſtre has been tranſmitted unſullied by foreign intercourſe. In ſhort, it is among the birds what the elephant is among the quadrupeds, a diſtinct race, widely ſeparated from all the others by characters as ſtriking as they are invariable.

The Oſtrich is reckoned the largeſt of the birds; but it is deprived of the prerogative of the winged tribe, the power of flying. The one which Valliſnieri examined weighed, though it was very lean, fifty-five pounds, after the entrails were taken out; ſo that, allowing twenty pounds for theſe, and the fat that was wanting *, we may eſtimate the weight of an Oſtrich when alive, and in tolerable habit, at ſeventy-five or eighty pounds. With what amazing force, then, muſt the wings, and the impelling muſcles of theſe wings, have been endowed, to have been able to raiſe and ſuſpend in the air ſo huge a maſs? The power of Nature appears to the ſuperficial obſerver as infinite; but when we examine cloſely the minute parts, we perceive that every thing is limited; and to diſcriminate with accuracy theſe limits, which the wiſdom, and not the weakneſs, of Nature has preſcribed, is the beſt method to

* Its two ſtomachs, after being properly cleaned, weighed only ſix pounds; the heart, with the auricles, and the trunks of the large veſſels, was one pound ſeven ounces; the two pancreaſes one pound; the inteſtines, which are very long and thick, muſt be of conſiderable weight.

ſtudy her works and operations. In the preſent caſe, the weight of ſeventy-five pounds exceeds all the exertions of animal force to ſupport it in the medium of the atmoſphere. Other birds alſo which approach in ſize to the Oſtrich, ſuch as the *Thuiou*, the Caſſowary, and the Dodo, are held down to the ſurface of the earth: but their weight is not the ſole obſtacle; the ſtrength of the pectoral muſcles, the expanſion of the wings, their favourable inſertion, the ſtiffneſs of the quill-feathers, &c. would here be conditions the more neceſſary, as the reſiſtance to be overcome is greater: but theſe requiſites are entirely wanting; for, to confine myſelf to the Oſtrich, this bird has, properly ſpeaking, no wings; ſince the feathers inſerted in the ſhoulders, inſtead of forming a compact body fit to make a powerful impreſſion upon the air, are divided into looſe ſilky filaments, and the feathers of the tail are of the ſame downy texture; nor can they admit the varying poſitions which are neceſſary for regulating their courſe. It is remarkable that in the Oſtrich the feathers are all of the ſame texture; whereas in moſt other birds, the plumage is compoſed of different kinds of feathers. Thoſe next the ſkin are ſoft and woolly; the coverts are cloſer and more ſolid; and the quill-feathers, which are deſtined to perform the motions, are long and ſtiff. The Oſtrich is, therefore, confined to the ground by a double chain; by its great weight, and the ſtructure of its

its wings, it is condemned, like the quadrupeds, to traverſe with labour the ſurface, and exiled from the region of the air; and in both external and internal ſtructure it bears great reſemblance to theſe animals; like them, the greateſt part of its body is covered with hair rather than feathers; its head and ſides are almoſt naked; and its legs, in which its ſtrength chiefly conſiſts, are thick and muſcular; its feet are ſtrong and fleſhy, reſembling thoſe of the camel, which differs from the other quadrupeds in that reſpect; its wings, furniſhed with two pikes like thoſe of the porcupine, are to be regarded rather as a kind of arms deſtined for its defence; the orifice of the ear is uncovered, and only lined with hair in the inſide at the auditory canal; its upper eye-lid is moveable, as in almoſt all the quadrupeds, and is edged with long eye-laſhes as in man, and in the elephant; the general ſtructure of the eyes is moſt analogous to what obtains in man, and they are ſo placed that both of them point to the ſame object. The parts near the bottom of the *ſternum*, and near the *os pubis*, which, as in the camel, are callous, and deſtitute of hair or feathers, indicate its weight, and reduce it to a level with the humbleſt of the beaſts of burden. Thevenot was ſo ſtruck with the analogy between the Oſtrich and the Dromedary, that he fancied he could perceive the hump on its back; but, though the back is indeed arched, there is nothing ſimilar to the fleſhy

protuberance that occurs in camels and dromedaries.

If we proceed, from the ſurvey of its external form, to examine its internal ſtructure, we ſhall diſcover other properties which diſtinguiſh it from the birds, and new analogies which link it with the quadrupeds.

The head is very ſmall *, flat, and compoſed of ſoft tender bones †, but the crown is hardened by a plate of horn. It is ſupported in a horizontal ſituation by a bony column near three feet in height, conſiſting of ſeventeen *vertebræ*. The body is commonly kept in the direction parallel to the horizon; the back is two feet long, formed by ſeven *vertebræ*, and with theſe are articulated on each ſide ſeven ribs, two falſe and five true; the laſt being double at their origin, and afterwards uniting into a ſingle branch. A third pair of falſe ribs form the *clavicle*; and the five true ribs are connected by cartilaginous ligaments to the *ſternum*, which deſcends not to the lower belly as in moſt birds, and which is leſs projecting; it reſembles a buckler in ſhape, and is broader than even the *ſternum* of a man. From the *os ſacrum* ariſes a

* Scaliger remarks that many ponderous birds, ſuch as the common cock, the peacock, the turkey, &c. have alſo a ſmall head; but that moſt birds which excel in flight, whatever be their ſize, are furniſhed with a proportionally bigger head. Scal. *Exercit. in Cardanum.*

† The anatomiſts of the Academy found a fracture in the cranium of one of the ſubjects which they diſſected.

kind

kind of tail, conſiſting of ſeven *vertebræ*, ſimilar to thoſe in man; the *os femoris* is a foot long; the *tibia*, and *tarſus*, a foot and a half each; every toe conſiſts of three *phalanges* as in man, while other birds have ſeldom an equal number *.

The bill is rather ſmall †, but opens wide; the tongue is very ſhort, and deſtitute of *papillæ*. The *pharynx* is broad, proportioned to the aperture of the mouth, and would admit a body of the ſize of the fiſt. The *æſophagus* is alſo wide and ſtrong, and terminates in the firſt ventricle, which in this bird performs three different functions; that of a craw, becauſe it is the firſt; that of a ventricle, being partly muſcular, and partly conſiſting of longitudinal circular fibres; and that of the glandulous protuberance, which generally occurs in the lower part of the *æſophagus* next the gizzard, ſince it is furniſhed with a great number of glands, conglomerated, and not conglobated, as in moſt other birds ‡. The firſt ventricle is ſituated below the ſecond; ſo that what is generally termed the *ſuperior orifice*, in regard to its place, is in this caſe really the inferior. The ſecond ventricle is often divided from the firſt by a ſlight conſtricture; and ſometimes it is beſides formed into two cavities

* Paré and Valliſnieri.

† Briſſon ſays, that the bill is unguiculated; Valliſnieri, that it is pointed obtuſely without any hook. The tongue varies much in different ſubjects.

‡ *Mem. pour ſervir à l'Hiſtoire des Animaux.*

by

by a ſimilar conſtricture; but this diviſion can never be perceived externally. It is covered with glands, and inveſted with a villous coat ſomething like flannel, but with little adheſion, and perforated with an infinite number of ſmall holes, correſponding to the orifices of the glands. It is not ſo ſtrong as the gizzards of birds generally are; but it is ſtrengthened externally by very powerful muſcles, ſome of them three inches thick. Its outward form reſembles much that of the human ventricle.

Du Verney pretends that the hepatic duct terminates in this ſecond ventricle *, as happens in the tench, and many other fiſhes, and ſometimes even in man, according to the obſervation of Galen †. But Ranby ‡ and Valliſnieri affirm, that in ſeveral Oſtriches which they examined, they always found the inſertion of this duct in the *duodenum* two inches, one inch, and ſometimes only half an inch below the *pylorus*. Valliſnieri alſo points out the origin of this miſtake, if it be ſuch, adding that in two Oſtriches he traced a veſſel from the ſecond ventricle to the liver, which he firſt took for a branch of the hepatic duct, but afterwards diſcovered that it was an artery which conveyed blood to the liver, and not bile to the ventricle.

* *Hiſt. de l'Academie des Sciences*, 1694.

† In Valliſnieri.

‡ Philoſoph. Tranſact. N° 386.

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The *pylorus* varies in regard to its width in different ſubjects; it is generally tinged with yellow, and, as well as the cavity of the ſecond ventricle, is imbued with a bitter liquor. This is eaſily accounted for, becauſe the hepatic duct takes its origin in the *duodenum*, and runs upwards.

The *pylorus* diſcharges itſelf into the *duodenum*, the narroweſt of all the inteſtines, and in which are alſo inſerted the two pancreatic ducts, a foot, and ſometimes two or three feet, below the junction of the hepatic; while in other birds the inſertion is made cloſe to the gall duct.

The *duodenum* and the *jejunum* are without valves; the *ileon* is furniſhed with ſome, as it runs into the *colon*. Theſe three ſmall inteſtines are nearly half the length of the whole alimentary canal, which, in different ſubjects even of the ſame bulk, is ſubject to variation, being ſixty feet in ſome, and only twenty-nine in others.

The two *cæca* riſe from the beginning of the *colon*, according to the anatomiſts of the Academy; or from the end of the *ileum*, according to Ranby. Each *cæcum* forms a kind of hollow cone two or three feet long, an inch wide at the baſe, and furniſhed in the inſide with a valve in the form of a ſpiral plate, making near twenty revolutions from the bottom to the top, as in the hare, the rabbit, the ſea-fox, the ray, the cramp-fiſh, and the thornback, &c.

The

The *colon* alſo is furniſhed with leaf-ſhaped valves, but which, inſtead of turning ſpirally, form a creſcent that occupies rather more than half the circumference of the *colon*: ſo that the ends of the oppoſite creſcents ſlightly overlap each other. And this ſtructure alſo occurs in the *colon* of the monkey, and in the *jejunum* of man, and marks the inteſtine exteriorly with tranverſe parallel furrows, about half an inch diſtant, and correſponding to the interior valves: but it is remarkable that theſe creſcents do not occur through the whole length of the *colon*, or rather that the Oſtrich has two very different *colons*; the one broad and about a foot long, furniſhed with leafy valves; the other, narrower, and totally deſtitute of valves, but extending to the *rectum*.

The *rectum* is very wide, about a foot long, and near its termination covered with fleſhy fibres. It opens into a large bag or bladder conſiſting of membranes, the ſame as the inteſtines, but thicker, and ſometimes containing even eight ounces of urine *. For the ureters make their diſcharge by a very oblique inſertion, as in the bladder of land animals; and not only convey

* The urine of the Oſtrich diſcharges ink-ſpots according to Hirmolaüs. The aſſertion may be falſe, but Geſner was miſtaken in contradicting it, on the ground that no bird has urine. If this were admitted, of what uſe are the kidneys, and the ureters? The only difference in this reſpect between birds and quadrupeds is, that in the former the bladder opens into the *rectum*.

urine,

urine, but alſo the white glutinous matter that accompanies or envelopes the excrement in all birds.

This firſt bag, which wants only the neck to be a real bladder, communicates by an orifice furniſhed with a kind of *ſphincter* with the ſecond and laſt bag, which is ſmaller, and ſerves for the paſſage of the urine and the ſolid excrements; it is almoſt ſhut by a cartilaginous nut, adhering at its baſe to the junction of the *os pubis*, and cleft in the middle like that of the apricot.

The ſolid excrements are very like thoſe of ſheep and goats, being divided into little balls, whoſe bulk bears no relation to the capacity of the inteſtines where they are formed. In the ſmall inteſtines, the appearance is like that of ſoup, ſometimes green, ſometimes black, according to the quantity of aliment, which acquires conſiſtence as it approaches the thick inteſtines, but does not receive its ſhape until it enters the ſecond *colon*.

Near the *anus* are ſometimes found ſmall ſacs, ſomewhat ſimilar to what occur in the ſame parts in lions and tigers.

The meſentery is tranſparent through its whole extent, and in ſome parts it is a foot broad. Valliſnieri pretends to have diſcovered in it manifeſt traces of lymphatic veſſels: Ranby alſo ſays, that the veſſels of the meſentery are very diſtinct, but adds, that its glands can hardly be perceived.

To moſt obſervers indeed they have been altogether inviſible.

The liver is divided into two great lobes, as in man, but it is placed nearer the middle of the hypochondriac region, and has no gall bladder. The ſpleen is contiguous to the firſt ſtomach, and weighs at leaſt two ounces.

The kidneys are very large, ſeldom parted into ſeveral lobes as in other birds, but oftener ſhaped like a guitar, with a broad belly.

The ureters never creep along the kidneys as in moſt other birds, but penetrate into their ſubſtance.

The *epiploon* is very ſmall, and only covers a part of the ventricle; but in its ſtead we find over all the belly, and ſometimes on the inteſtines, a coat of fat or tallow ſpread between the *aponeuroſes* of the muſcles of the abdomen, and from two to ſix inches thick. It was this fat mixed with blood that formed the *manteca*, which was highly eſteemed, and extremely dear among the Romans, who, according to Pliny, reckoned it more efficacious than gooſe fat, for rheumatiſm, cold ſwellings, and palſy; and even at preſent the Arabians preſcribe it in theſe diſorders*. Valliſnieri is the only one who, probably from his happening to diſſect very lean Oſtriches, ſuſpects the exiſtence of this fact; and the more ſo, that in Italy the leanneſs of the Oſtrich has paſſed into

* *The World Diſplayed*, vol. xiii.

a pro-

a proverb, *magro comme uno ſtruzzo* *; he adds, that thoſe which he examined appeared after diſſection like mere ſkeletons: but this muſt be the caſe with reſpect to all Oſtriches that have no fat, or in which it has been ſeparated, ſince there is no fleſh on the breaſt or belly, for the muſcles of the abdomen do not become fleſhy till they reach the ſides.

If from the organs of digeſtion we paſs to thoſe of generation, we ſhall find other analogies to the ſtructure which obtains in quadrupeds. In the greateſt number of birds, the *penis* is concealed; but in the Oſtrich it is apparent, and of a conſiderable ſize, compoſed of two white ligaments, that are ſolid and nervous, four lines diameter, and ſheathed in a thick membrane, and which only unite at the breadth of two fingers from their extremity. Sometimes we alſo meet in the ſame part a red ſpongy ſubſtance, ſupplied with a multitude of veſſels, and very ſimilar to the *corpus cavernoſum* that is obſerved in the land animals. The whole is incloſed in a common membrane, whoſe texture is the ſame as that of the ligaments, though not ſo thick or hard. This *penis* is furniſhed with neither gland nor prepuce; nor, according to the anatomiſts of the academy, is even perforated for the ejection of the ſeminal fluid; but Warren pretends that he diſſected an Oſtrich, whoſe yard was five inches and a half

* "Meagre as an Oſtrich."

long,

long, and furrowed longitudinally along the upper ſurface, with a kind of channel, which appeared to him to be deſtined for conveying the ſemen. Whether this channel was formed by the junction of the two ligaments; or that Warren miſtook for the *penis* the cartilaginous nut of the ſecond bag of the *rectum*, which is in fact parted; or that the ſtructure and ſhape of this organ is liable to vary in different ſubjects; it appears that the yard adheres at its origin to the cartilaginous nut, and bending downwards, it paſſes through the ſmall ſac, and emerges at the external orifice, which is the *anus*, and which being edged with a membranous fold, forms at this part a falſe prepuce, that Dr. Brown has undoubtedly miſtaken for a real prepuce, for he is the only perſon who aſſerts that the Oſtrich has that excreſcence *.

There are four muſcles attached to the *anus* and the yard, whence reſults a ſympathy of motion; and this is the reaſon why, when the animal voids its excrements, the yard protrudes ſeveral inches †.

The teſticles differ widely in regard to ſize in different individuals, and vary even in the proportion of forty-eight to one; owing, doubtleſs, to their age, the ſeaſon, the nature of the diſeaſe which preceded death, &c. Their external ſhape varies

* *Collect. Philoſ.*

† Warren learned this fact from perſons who kept ſeveral Oſtriches in England.

alſo,

alſo, but their external ſtructure is always uniform; they lie on the kidneys, nearer the left than the right. Warren imagined he could perceive ſeminal veſicules.

The females alſo have teſticles; for ſo we ought to call thoſe glandulous bodies, four lines in diameter and eighteen long, which are found under the *ovarium* adhering to the *aörta* and *vena cava*, and which nothing but the predilection of ſyſtem could convert into the lower glands of the kidney. The female Little Buſtard is alſo furniſhed with teſticles ſimilar to thoſe of the male, and there is reaſon to believe that the female of the Great Buſtard has the ſame ſtructure; and if the Anatomiſts of the Academy, in their numerous diſſections, have ſuppoſed that they never met with any but males, it is becauſe they would not admit an animal in which they found teſticles to be a female. But every body knows that the Buſtard approaches the neareſt of the European birds to the Oſtrich, and therefore all that I have ſaid on the ſubject of the generation of teſticles in the bodies of female quadrupeds, applies readily to this claſs, and will afterwards perhaps be diſcovered to admit of a greater extenſion.

Below theſe two glandulous bodies is placed the *ovarium*, adhering alſo to the great blood veſſels; it generally contains eggs of different ſizes, incloſed in their capſule like ſmall glands, and attached to the ovarium by their ſtalks.

This *ovarium* is ſingle, as in almoſt all birds; and we may remark by the way that this affords another preſumption againſt the opinion of thoſe who maintain that the two glandulous bodies which occur in all the females of quadrupeds, repreſent the *ovarium*, which is a ſingle organ; inſtead of admitting that they are really teſticles, which muſt be reckoned among the double parts, both in the males of birds and in thoſe of quadrupeds *.

The funnel of the *oviductus* opens below the *ovarium*, and ſends off to the right and left two winged membranous appendices, which reſemble thoſe that occur at the end of the tube in land animals. The eggs which are ſeparated from the *ovarium* are received into this funnel, and conveyed along the *oviductus* to the laſt inteſtinal ſac, where they are diſcharged through an orifice, which, in its natural ſtate, is only four lines in diameter, but its wrinkled ſurface expands and forms a dilatation proportional to the bulk of the eggs. All the inner coat of the *oviductus* is alſo full of wrinkles, or rather folds, as in the third and fourth ſtomachs of the ruminating animals.

* The Flamingo is the only bird in which the Anatomiſts of the Academy found two *ovaria*; and theſe are, according to them, nothing more than two hard ſolid glandulous bodies, of which the left one is divided into ſeveral unequal globules. But this is a ſingular inſtance from which no general concluſion can be drawn.

Laſtly,

Laſtly, the ſecond inteſtinal bag has its cartilaginous nut in the female as well as in the male; and this nut, which ſometimes projects more than half an inch from the *anus*, has a ſmall appendix three lines in length, thin and incurvated, which the Anatomiſts of the Academy take for a *clitoris*, and with the greater probability, as the ſame two muſcles that are inſerted in the baſe of the yard in the males, are alſo connected to the origin of this appendix in the females.

I ſhall not dwell on the deſcription of the organs of reſpiration, ſince they reſemble almoſt entirely thoſe of the other birds; conſiſting of two lungs of a ſpungy ſubſtance with ten air cells, five on each ſide, of which the fourth is here the ſmalleſt, as uſual in all the bulky ſpecies of birds: theſe cells receive the air from the lungs, with which they have very diſtinct communications; but they muſt alſo have communications with other parts, though leſs apparent; for when Valliſnieri blew into the *trachea-arteria*, he obſerved an inflation along the thighs and wings, which indicates a ſtructure ſimilar to that of the Pelican, in which Mery perceived, under the inſertion of the wing, and between the thigh and the belly, membranous bags, which were filled with air during expiration, or when air was injected forcibly into the *trachea-arteria*, and which probably furniſh it to the cellular texture.

Dr. Brown poſitively aſſerts, that the Oſtrich has no *epiglottis:* Perrault ſuppoſes the ſame thing, ſince he beſtows on a certain muſcle the office of ſhutting the *glottis*, by contracting the *larynx*. Warren affirms that he perceived a glottis in the ſubject which he diſſected; and Valliſnieri reconciles theſe oppoſite opinions, by ſaying that there is really no perfect *epiglottis*, but that the poſterior part of the tongue ſupplies the defect, cloſing on the *glottis* in deglutition.

There are various opinions alſo with reſpect to the number and form of the cartilaginous rings of the *larynx:* Valliſnieri reckons only two hundred and eighteen, and maintains, with Perrault, that they are all entire: Warren found two hundred and twenty-ſix complete, excluſive of the firſt ones which were imperfect, or thoſe immediately under the forking of the *trachea*. All this may be true, conſidering the great varieties to which the ſtructure of the internal parts are ſubject; but it proves at the ſame time the raſhneſs of attempting to deſcribe a whole ſpecies from a ſmall number of individuals, and the danger of miſtaking anomalous varieties for conſtant characters. Perrault obſerved, that each of the two branches of the *trachea-arteria* is divided at its junction with the lungs into a number of membranous ramifications, as in the elephant. The brain, with its *cerebellum*, forms a maſs about two inches and a half long, and

twenty lines broad. Vallisnieri affirms, that the one he examined weighed only an ounce, which would not amount to the one-twelfth-hundredth part of the weight of the animal: he adds, that the structure was exactly similar to that of the brain of other birds, and precisely such as described by Willis. I shall observe however, with the Anatomists of the Academy, that the ten pairs of nerves arise and proceed from the *cranium*, in the same manner as in land animals; that the cortical and the medullary part of the *cerebellum* are also disposed as in these animals; and that we sometimes find the two vermiform apophyses which occur in man, and a ventricle, shaped like a writing pen, as in most of the quadrupeds.

With respect to the organs of circulation, I shall only notice, that the heart is almost round, while in other birds it is generally elongated.

In regard to the external senses, I have already described the tongue, the ear, and the external form of the eye: I have only to add, that its internal structure is the same with what is commonly observed in birds. Ranby asserts, that the ball taken from its socket, spontaneously assumes a form almost triangular; he also remarks, that the quantity of the aqueous humour is greater, and that of the vitreous less than ordinary.

The nostrils are placed in the superior mandible, not far from its base, and on the middle of each aperture rises a cartilaginous protuberance

covered with a very thin membrane, and theſe apertures communicate with the palate by means of two canals which terminate in a pretty large cleft. We ſhould be miſtaken, were we to infer from the complicated ſtructure of this organ, that the Oſtrich poſſeſſed the ſenſe of ſmell in an eminent degree; for the moſt undoubted facts prove exactly the reverſe; and in general it appears that the chief impreſſions, and the moſt exquiſite which this animal receives, are thoſe of ſight, and of the ſixth ſenſe.

This ſhort view of the internal organization of the Oſtrich is more than ſufficient to confirm the idea which I before gave, that this ſingular animal muſt be conſidered as a being of an equivocal nature, and as forming the ſhade between the quadruped and the bird: and in a ſyſtem which would repreſent the true gradation of the univerſe, it ſhould be referred neither to the claſs of quadrupeds nor to that of birds, but ranged in the intermediate place. Indeed, what rank can we aſſign to an animal whoſe body is partly that of a bird, partly that of a quadruped*; its feet like thoſe of a quadruped, its head ſimilar to that of a bird; the male furniſhed with a *penis*, the female with a *clitoris*, as in the quadrupeds; which is oviparous, and has a gizzard like the birds, and at the ſame time is ſupplied with ſeveral ſtomachs, and with inteſtines, whoſe

* Ariſtotle.

capacity

capacity and ſtructure are analogous partly to the ruminating, and partly to the other quadrupeds?

In the order of fecundity, the Oſtrich ſeems to be more nearly related to the quadrupeds than to the birds; for its incubations are frequent, and it hatches many young at a time. Ariſtotle ſays, that, next after the Oſtrich, the bird which he calls the *Atricapilla*, is that which lays the moſt eggs; and he adds, that this bird, *Atricapilla*, lays twenty and more; whence it follows that the Oſtrich lays at leaſt twenty-five. Beſides, the beſt informed modern hiſtorians and travellers relate, that it has ſeveral ſittings, with twelve or fifteen eggs in each. But if we refer it to the claſs of the birds, it would be the largeſt, and conſequently ought to be the leaſt prolific, according to the law which Nature ſeems to have conſtantly obſerved in the multiplication of animals, that it is univerſally proportional to the bulk of the individuals; whereas, if we refer it to the claſs of land animals, it appears diminutive beſide the largeſt ſpecies, and ſmaller than thoſe of a middle ſize, as the hog, and its great fecundity is therefore conſiſtent with the general order of the univerſe.

Oppian, who entertained the ſtrange notion that the camels of Bactriana copulated backwards, turning their tails to each other, believed alſo that the *camel bird* (the name anciently applied to the Oſtrich) performs its embraces in

the ſame manner; and he advances it as an undoubted fact. But this is no more probable with reſpect to the camel-bird than with reſpect to the camel itſelf; and though it is moſt probable that few obſervers have witneſſed their coupling, and that none have deſcribed it, we ought ſtill to conclude, ſince there is no proof of the contrary, that it is accompliſhed in the uſual way.

The Oſtriches are reckoned exceſſively ſalacious, and often copulate; and if we recollect what has been already ſaid with reſpect to the dimenſions of the yard, we ſhall readily conceive that this act is not performed by mere compreſſion, as in almoſt all the other birds, but that the male organ is really introduced into the ſexual parts of the female: Thevenot is the only perſon who aſſerts that they pair, and that, contrary to what is uſual with the large birds, each male ſelects his female.

The time of laying their eggs depends on the climate they inhabit, but is always near the ſummer ſolſtice; that is, about the beginning of July, in the northern parts of Africa*, and towards the end of December, in the ſouthern tracts of that continent †. The temperature of the climate has alſo great influence on the mode of hatching. In the torrid zone, they are contented with depoſiting their eggs in a heap of ſand looſely ſcraped together with their feet, and

* Albert. † Dampier.

leave

leave the developement of the young to the powerful agency of a burning ſun. Nor is this always neceſſary; they are ſometimes hatched, though neither covered by the mother, nor expoſed to the influence of the ſolar rays *. But though the Oſtrich has ſeldom or never recourſe to incubation, ſhe is far from abandoning her eggs: ſhe watches aſſiduouſly over their preſervation, and ſeldom loſes ſight of them. This has given occaſion to the ſaying, that they hatch them with their eyes; and Diodorus relates a method of catching theſe animals, which is founded on their ſtrong attachment to their expected offſpring: this is to ſet in the ground round the neſt, at a proper height, ſtakes, armed with ſharp points, upon which the mother ruſhes heedleſsly, and is transfixed.

Though the climate of France is much colder than that of Barbary, Oſtriches have ſometimes laid their eggs in the *Menagerie* of Verſailles; but the Anatomiſts of the Academy were unſucceſsful in their attempts to hatch them, either by artificial incubation, or by the heat of the ſun, or by the application of the gradual heat of a ſlow regulated fire; nor could they trace in any of the eggs the leaſt marks of an incipient organization, or diſcover the

* When Jannequin was at Senegal, he put two Oſtrich's eggs into a caſk, and packed them well with tow; but ſometime afterwards, on opening it, he found that one of the eggs was quite ripe for excluſion.

ſlighteſt indication of the production of a new being.—The yolk and the white of the one that had been heated by the fire, were only a little thickened; that expoſed to the ſun contracted a very putrid ſmell; but neither ſhewed the leaſt appearance of the rudiments of a *fœtus;* and in ſhort, this philoſophical incubation was totally unſucceſsful*.—Reaumur had not yet appeared.

The eggs are extremely hard, heavy, and large; but ſometimes they are ſuppoſed to be more bulky than they really are, thoſe of the crocodile being miſtaken for them †. It has been aſſerted, that they are as large as the head of a child ‡, that they would contain a quart ‖, that they weigh fifteen pounds, and that an Oſtrich lays fifty § eggs in the year; Ælian goes as far as eighty. But moſt of theſe circumſtances are evidently exaggerated; for, firſt, is it poſſible that an egg, whoſe ſhell is not more than a pound in weight, and whoſe capacity is at moſt only a quart, could weigh fifteen pounds? To reconcile this, we muſt ſuppoſe that the yolk and white are ſeven times denſer than water, three times than marble, and almoſt as denſe as tin, which is rather a ſtrained hypotheſis. Secondly, Admitting with Willughby, that the Oſtrich lays annually fifty eggs, weighing fifteen pounds each, it would follow that, in the courſe of the year, ſhe would exclude ſeven hundred

* *Mem. pour ſervir à l'Hiſt. des Anim.* † Belon.
‡ Willughby. ‖ Belon. § Leo Africanus.

and

and fifty pounds, which is too much for an animal that is ſcarcely eighty pounds weight.

We muſt therefore make a conſiderable abatement both in the weight of the eggs, and in their number; but it is a pity that we have not ſufficient data to aſcertain the preciſe quantity. Ariſtotle indeed renders it probable, that the number of eggs is from twenty-five to thirty; and the moſt judicious modern writers ſtate it at thirty-ſix. If we ſuppoſe two or three layings in the year, and a dozen eggs to each, we might alſo admit the weight of each egg to be three or four pounds, allowing a pound for the ſhell, and two or three for the white and yolk; but this is merely conjecture, and far from being accurate. Many people write, but few weigh, meaſure, or compare. Of fifteen or ſixteen Oſtriches which have been diſſected in different countries, only one has been weighed, and it is that which we have deſcribed from Valliſnieri.—We are no better informed with reſpect to the time neceſſary for the incubation of the eggs; all we know, or rather all that is aſſerted is, that as ſoon as they are hatched, the young Oſtriches are able to walk, and even to run and ſearch for their food; inaſmuch that in the torrid zone *, where they enjoy the proper degree of warmth, and can eaſily provide their ſuitable ſubſiſtence, they are emancipated at their birth, and abandoned by their mother, on

* Leo Africanus.

whoſe

whoſe aſſiſtance they are independent. But, in the more temperate countries, as at the Cape of Good Hope*, the mother watches over her young ſo long as her aſſiduous attention is neceſſary; and in every climate her care is proportioned to their wants.

The young Oſtriches are of an aſh-gray the firſt year, and entirely covered with feathers; but theſe are falſe, and ſoon drop. They are never reſtored on the head, on the top of the neck, on the thighs, on the ſides, and below the wings; but they are replaced on the reſt of the body by plumes alternately black and white, and ſometimes gray, from the blending theſe two colours into each other. The ſhorteſt are on the lower part of the neck; thoſe on the belly and the back are longer; but the longeſt of all are thoſe at the extremity of the tail and of the wings, and are alſo the moſt eſteemed. Klein mentions, on the authority of Albert, that the dorſal feathers are very black in the males, and brown in the females; but the Academicians, who diſſected eight Oſtriches, five male and three female, found the plumage nearly alike in all; yet they never obſerved red, green, blue, or yellow feathers, as Cardan ſeems to have believed, from a ſtrange overſight in a work *De Subtilitate.*

Redi diſcovered, from numerous obſervations,

* Kolben's Account of the Cape.

that

that almoſt all birds are ſubject to vermin in their feathers, and even vermin of different kinds; that the greateſt number have inſects peculiar to them, and no where elſe found; but in no ſeaſon could he ever perceive them in Oſtriches, though he examined a dozen of thoſe animals, ſome of which had been recently brought from Barbary. Further, Vallifnieri, who diſſected two Oſtriches, found in the bowels neither *lumbrici*, nor worms, nor inſects of any ſort. It would ſeem therefore, that none of theſe creatures are fond of the Oſtrich fleſh; that they avoid it with an averſion, and that it has ſome quality pernicious to their multiplication. Perhaps the breeding of vermin is prevented internally by the great powers of the ſtomach, and the digeſtive organs. Many fabulous opinions have been entertained on this ſubject. It has been aſſerted, that the Oſtrich digeſts iron as poultry digeſt grain; and ſome authors have even gone ſo far as to allege, that it could digeſt red-hot iron *. The laſt opinion requires no ſerious refutation; and it will be enough to aſcertain from facts, if the Oſtrich can grind down cold iron.

It is certain that theſe birds live chiefly on vegetable ſubſtances; that their gizzard is lined with very ſtrong muſcles, as in all the granivo-

* Marmol, *Deſcrip. de l'Afrique*.

rous

rous claſs *; that they often ſwallow bits of iron †, copper, ſtones, glaſs, wood, and any thing that occurs. I will not deny that they may even ſometimes ſwallow hot iron, if the quantity be ſmall, and this perhaps without ſuffering any inconvenience. It appears that they ſwallow whatever they can find, till their capacious ſtomachs be completely filled; and that the need of ballaſting them with a ſufficient weight, is one of the principal cauſes of their voracity. The gallinaceous tribe, and other granivorous animals, whoſe organs of taſte want ſenſibility, alſo ſwallow many ſmall ſtones, when mixed with their food, miſtaking them probably for grains; but if ſtones be offered alone, they will periſh of hunger, and not touch one of them; and ſtill leſs will they meddle with quick-lime. We may therefore conclude, that the Oſtrich is one of the birds whoſe ſenſes of taſte and ſmell are the moſt obtuſe; and in this circumſtance they are widely ſeparated from the quadrupeds.

But what become of thoſe hard noxious ſubſtances, eſpecially the copper, the glaſs, and the iron, which the Oſtrich ſwallows at random, and

* Though the Oſtrich is actually omnivorous, it may ſtill be ranged in the granivorous claſs, ſince in its deſerts it lives on dates, and other fruits, or vegetable ſubſtances; and in *menageries* it may be kept on the ſame food. Alſo Strabo tells us, Book vi. that when the hunters want to enſnare it, they uſe grain for bait.

† I ſay often; for Albert affirms that many Oſtriches would not ſwallow iron, though they devoured hard bones, and even ſtones with avidity.

merely

merely with the view of repletion? On this ſubject the authors are divided, and adduce particular facts in ſupport of each opinion. Perrault, having found ſeventy doubloons in the ſtomach of one of theſe animals, obſerved, that moſt of them were worn down, and reduced to three-fourths of their prominence. He conceived that this was occaſioned by their mutual friction, and the comminution of pebbles, rather than by the action of any acid; ſince ſome of theſe doubloons were much corroded on the convex ſurface, which was moſt expoſed to the attrition, and yet not in the leaſt affected on the concave ſide. He therefore concluded, that, in theſe birds, the ſolution of the food is not performed merely by ſubtile and penetrating juices, but is effected by the organic action of the ſtomach, which compreſſes its aliments, and agitates them inceſſantly with thoſe hard bodies which they inſtinctively ſwallow. And, becauſe the contents of the ſtomach were tinged with green, he inferred that the copper was actually diſſolved in it; not by any particular ſolvent, nor by the powers of digeſtion, but in a ſimilar manner to what would take place if that metal were ground with herbage, or with ſome acid or ſaline liquor. He adds, that copper, far from affording nouriſhment in the ſtomach of the Oſtrich, really acts as a poiſon, and that all thoſe who ſwallowed much of it ſoon died.

Valliſ-

Vallifnieri, on the other hand, imagines, that the Oſtrich digeſts or diſſolves the hard ſubſtances chiefly by the action of the acid liquor of the ſtomach; but he does not exclude the effect of attrition which may aſſiſt the ſolution. His proofs are theſe:

1. Bits of wood, iron, or glaſs, which have remained ſome time in the ſtomach of the Oſtrich, are not ſmooth and ſhining, as they would be if worn by the friction of the coats; but are rough, furrowed, perforated, and preciſely ſuch as would be produced by the corroſion of a ſolvent.

2. This ſolvent reduces the hardeſt and the ſofteſt bodies alike to impalpable molecules, which may be obſerved by the microſcope, and even by the naked eye.

3. He found in the ſtomach of the Oſtrich a nail fixed in one of the ſides, in ſuch a manner as to prevent its meeting the oppoſite ſide, and conſequently the compreſſion of the contents; yet the food was as completely diſſolved in this ventricle as in another in which the uſual action could take place; and this at leaſt proves, that in the Oſtrich digeſtion is not performed ſolely by trituration.

4. He obſerved a copper thimble in the ſtomach of a capon, which was corroded only where it touched the gizzard, and conſequently where it was leaſt expoſed to the attrition of the hard

hard ſubſtances; whence the ſolution of metals in the gallinaceous tribe muſt be aſcribed rather to the action of ſome menſtruum, than to the preſſure and reſiſtance of the coats; and the analogy naturally extends to the Oſtrich.

5. He diſcovered in the ſtomach of the Oſtrich, a piece of money which had been ſo completely corroded, that its weight was reduced to three grains.

6. The glands of the firſt ſtomach exude, when ſqueezed, a viſcous, yellowiſh, inſipid liquor, which, however, quickly marks iron with a dull ſpot.

7. Laſtly, the activity of theſe juices, the force of the muſcles of the gizzard, and the black colour which tinges the excrements of the Oſtriches that have ſwallowed iron, which alſo happens to thoſe perſons who uſe martial preparations, and have a vigorous digeſtion, ſupporting the preceding facts, incline Valliſnieri to conjecture, not indeed that the Oſtriches really digeſt iron, and are nouriſhed by it, as ſeveral inſects and reptiles feed on earth and ſtones, but that the ſtones and the metals, eſpecially iron, being diſſolved by the gaſtric liquor, temper, like abſorbents, the acrid juices of the ſtomach, and mix with the nutriment as uſeful ingredients for ſeaſoning it, and increaſing the action of the ſolids. And this concluſion is the more reaſonable, ſince iron is known to enter into the compoſition of living beings; and,

when ſufficiently attenuated by proper acids, it becomes volatile, and ſhews a tendency as it were to vegetate, and aſſume forms analogous to thoſe of plants, as is obſerved in the *arbor Martis* *. In this ſenſe only can the Oſtrich be ſaid to digeſt iron: and even admitting that the powers of the ſtomach were ſufficient to produce the effect, it is ſtill extremely ridiculous to imagine, that the gizzard has the beneficial qualities of a medicine, and is proper for aſſiſting a debilitated appetite. But ſuch is the nature of the human mind! ſtruck with a rare or ſingular object, ſhe never fails to heighten the wonder by the addition of chimerical, and often abſurd qualities. Hence it has been affirmed, that the moſt tranſparent ſtones found in the ſtomach of the Oſtrich, have the virtue, when applied to the neck, of promoting digeſtion; that the inner coat of the gizzard has the power of correcting a cold temperament, and of rekindling the fire of luſt; its liver, that of curing the falling-ſickneſs; its blood, that of reſtoring ſight; and, the ſhell of its egg reduced to powder, that of relieving the gout, and the gravel, &c. Valliſnieri had an opportunity of demonſtrating by experiments the falſity of theſe pretended virtues; and his experiments are the more deciſive, as they were

* *Memoires de l'Academie des Sciences, années* 1705, 1706, *& ſuivantes*; VALLISNIERI. His opinion is farther confirmed by the obſervations of Santorini on bits of money, and keys found in the ſtomach of an Oſtrich which was diſſected at Venice; and by the experiments of the Academy *de Cimento* on the digeſtion of birds.

per-

performed on perſons the moſt credulous, and the moſt ſubject to prejudices.

The Oſtrich is a bird peculiar to Africa, the iſlands contiguous to that continent *, and that part of Aſia which borders on it. Theſe regions, which are the native abodes of the camel, the rhinoceros, the elephant, and many other large animals, muſt alſo be the paternal ſeat of the Oſtrich, which is the elephant of the birds. They are very numerous, according to Dr. Pocock, on the mountains ſituated on the ſouth-weſt of Alexandria. A miſſionary mentions that they occur at Goa, though much more rarely than in Arabia †. Philoſtratus pretends that Apollonius found them even beyond the Ganges ‡; but this was certainly at a period when Hindoſtan was leſs populous than at preſent. Modern travellers have never obſerved any in that country, unleſs ſuch as were carried thither §; and all agree, that on either ſide of the line, they never paſs beyond the thirty-fifth degree of latitude; and as they cannot fly, they are in the ſame predicament with the quadrupeds in the ſouthern tracts of the ancient conti-

* The *Vorou-Patra* of Madagaſcar is a kind of Oſtrich which retires into ſolitary ſpots, and lays eggs of an uncommon ſize.

† Travels of Father Philip, a bare-footed Carmelite.

‡ Life of Apollonius, book iii.

§ They are kept in the *menageries* of the king of Perſia, according to Thevenot; which ſhews that they are not common in that country. On the road from Iſpahan to Schiras four Oſtriches were brought into the *caravanſera*, ſays Yemelli Carreri.

nent; that is, they cannot migrate into the new continent. Hence they have never been diſcovered through the whole range of America, though the name has been applied to the Touyou, which is analogous to them indeed, but is quite a different ſpecies, as we ſhall ſoon find. For the ſame reaſon they have never been found in Europe, though they might enjoy a climate ſuited to their nature in the Morea, in the ſouth of Spain, and in Italy. But, before they could migrate into theſe countries, they muſt have croſſed the intervening ſeas, which was impoſſible; or follow the line of coaſt as high as the fiftieth degree of latitude, another obſtacle equally inſurmountable for an animal that delights in the parched plains. The Oſtriches prefer the moſt ſolitary and the moſt arid tracts, that are ſcarcely ever refreſhed by genial ſhowers*; and this confirms the account of the Arabians, that they do not drink. They aſſemble in theſe deſerts in numerous flocks, which at a diſtance

* "Theophraſtus ſays, that the Oſtrich breeds in that part of Africa where it does not rain." GESNER. All the travellers and naturaliſts are agreed on this point. G. Warren is the only perſon who reckons the Oſtrich aquatic: he admits that it never ſwims; but ſays that its legs are tall, and its neck long; ſo that it could wade in the water and catch its prey; and, as its head reſembles that of a gooſe, hence he infers that it is a river bird. *Philoſ. Tranſ.* N° 394. Another hearing that in Abyſſinia the Oſtriches were of the ſize of an aſs, and that their neck and feet reſembled thoſe of the quadrupeds, concluded that they muſt have an aſs's tail and feet. SUIDAS.—Hardly is any part of Zoology ſo obſcured by abſurdities as the hiſtory of the Oſtrich.

reſemble

reſemble troops of cavalry, and as ſuch have alarmed many caravans. Their life muſt be ſpent rather hardly in theſe vaſt barren ſolitudes; but there they taſte the ſweets of liberty and love. And is not the deſert which offers theſe raviſhing pleaſures converted into an Elyſian field? To enjoy theſe ineſtimable bleſſings they fly the preſence of man; but man learns the profit he can derive from them; he haunts them in their moſt ſavage retreats; he feeds on their eggs, their blood, their fat, their fleſh; decks himſelf with their plumes; and perhaps he flatters himſelf with the hope of completely ſubduing them, and of ranking them among the number of his ſlaves. The advantages which the domeſtication of the Oſtrich promiſes are ſo important, as to threaten its ſecurity, even in the deſerts.

Whole nations have merited the name of *Struthophagi*, from the cuſtom of feeding on the Oſtrich; and theſe people bordered on the *Elephantophagi*, who had not better cheer. For this diſh Apicius directs, and with great reaſon, a poignant ſort of ſauce; which proves that it was uſed among the Romans; but we have other evidences. The Emperor Heliogabalus once ordered the brains of ſix hundred Oſtriches to be ſerved up for a ſingle repaſt. That monſter, it is well known, had a whim of eating each day only a ſingle kind of food; ſuch as pheaſants, hogs, pullets, &c. and the Oſtrich was of the

number, but ſeaſoned no doubt after the *recipe* of Apicius. Even at preſent the inhabitants of Lybia, Numidia, &c. feed upon tame ones; eat the fleſh, and ſell the feathers: yet neither the dogs nor the cats would touch the fragments of the Oſtrich diſſected by Valliſnieri, though it was freſh and florid. It is indeed true that the Oſtrich was extremely lean, and was perhaps old; but Leo Africanus, who taſted them in their native deſerts, informs us, that they were ſeldom eaten, except when young, and even after being fattened. The Rabbi, David Kimchi, adds, that the females were preferred; and perhaps the fleſh was rendered more palatable by caſtration.

Cadamoſto and ſome other travellers mention their having taſted Oſtrich eggs, which they found not to be unpleaſant food; De Brue and Le Maire affirm, that a ſingle one is a meal ſufficient for eight men; and others aſſert, that it weighs as much as thirty hen eggs; but even this is far ſhort of fifteen pounds.

The ſhell of theſe eggs is formed into various ſorts of cups, which in time grow hard, and in ſome degree reſemble ivory.

When the Arabians have killed an Oſtrich, they open its throat, and make a ligature below the inciſion; three or four of them then take it, and ſhake it backwards and forwards, as we would rinſe a bottle: the ligature being then removed, a conſiderable quantity of *manteca*, of

of the conſiſtence of concrete oil, oozes from the hole. They extract ſometimes as much as twenty pounds from a ſingle Oſtrich; and this *manteca* is nothing but the blood of the animal mixed, not with the fleſh as has been alleged, ſince there is none on the belly and breaſt, but with that fat, which in plump Oſtriches forms, as we have ſaid, a coat ſeveral inches thick on the inteſtines. The natives of the country aſſert that the *manteca* is pleaſant to eat, but occaſions a looſeneſs.

The Ethiopians flay the Oſtriches, and ſell their ſkins to the merchants of Alexandria. The leather is very thick, and the Arabians formerly made it into inner jackets, which ſerved inſtead of a cuiraſs and buckler. Belon ſaw large quantities of theſe ſkins ſtripped of their feathers in the ſhops at Alexandria.—The long white plumes of the tail and wings have always been highly eſteemed; the ancients uſed them for decoration, and appropriated them to diſtinguiſh the military profeſſion, in which they ſucceeded to the feathers of the ſwan; for birds have always furniſhed the poliſhed nations, as well as the ſavage tribes, with the materials of ornament. Aldrovandus informs us, that there are ſtill preſerved at Rome two ancient ſtatues, one of Minerva and another of Pyrrhus, in which the helmet is decked with the plumes of the Oſtrich. It ſeems probable that theſe alſo compoſed the bunch worn by the Roman ſoldiers, which Po-

lybius mentions, and which conſiſted of three black or red feathers, about a cubit in height. In Turkey, even at preſent, a Janiſſary, who has diſtinguiſhed himſelf by his warlike atchievements, is entitled to wear them in his turban; and in the ſeraglio, the Sultana, when ſhe would heighten her charms to obtain a gentler conqueſt, employs them to decorate her perſon. In the kingdom of Congo, theſe feathers are mixed with thoſe of the peacock, to form enſigns of war; and the ladies of England and of Italy make them into a ſort of fans. It is well known what prodigious conſumption is made of them in Europe for hats, helmets, theatrical dreſſes, furniture, canopies, funeral decorations, and even for female ornaments: and indeed it muſt be allowed, that they have a fine effect, both from their natural and their artificial colours, and from their gentle waving motion. But it may be proper to obſerve, that the feathers moſt admired, are thoſe which are plucked from the animal while alive; and are known by this property, that when the quill is preſſed by the fingers, it diſcharges a bloody liquor, while thoſe that are pulled after death are dry, light, and very liable to worms.

The Oſtriches, though inhabitants of the deert, are not ſo wild as might be ſuppoſed. All travellers agree in ſaying, that they are eaſily tamed, eſpecially when young. The people of Dara, of Lybia, &c. breed them in flocks, and undoubtedly

undoubtedly obtain from them feathers of the beſt ſort, which are only gotten from living Oſtriches. They even grow domeſtic without much trouble, merely from the habit of ſeeing men, and receiving food, and experiencing kind treatment. Brue, having purchaſed two of them at Serinpate on the coaſt of Africa, found them quite tame when he arrived at Fort St. Louis.

They have even been brought farther than domeſtication, and ſome have trained them to carry their rider like a horſe. Nor is this a modern invention; for the tyrant Firmius, who reigned in Egypt about the end of the third century, uſed, it is ſaid, to be carried on large Oſtriches. Moore, an Engliſhman, mentions, that he ſaw at Joar in Africa, a man travelling on an Oſtrich. Valliſnieri ſpeaks of a young man who mounted on an Oſtrich, exhibited at Venice before the rabble; and Adanſon ſaw, at the factory of Podor, two young Oſtriches, the ſtrongeſt of which ran faſter than the beſt Engliſh hunter, though it carried two negroes on its back. All this proves that theſe animals, though not abſolutely intractable, are yet of a ſtubborn nature, and if they could be taught ſo much as to keep together in flocks, and return to their ſtable, and even to allow themſelves to be mounted, it would ſtill be difficult and perhaps impoſſible to inſtruct them to obey the reins, to feel the wiſh of the rider, and comply with it.

We

We ſee, even from the relation of Adanſon, that the Oſtrich of Podor did not make a diſtant ſtretch, but only took ſeveral turns round the hamlet, and that its courſe could only be ſtopped by throwing ſome obſtacle in its way. Docile to a certain degree of ſtupidity, it ſeems intractable from its nature; and this muſt be really the caſe, ſince the Arab, who has tamed the horſe and enſlaved the camel, has never completely ſubdued the Oſtrich; but till this be obtained, advantage can neither be derived from its ſpeed nor its force, for the ſtrength of an indocile domeſtic is always hurtful to its maſter.

But, though the Oſtriches run faſter than the horſe, they are yet caught by means of horſes; but to ſucceed requires dexterity. The plan which the Arabs take is to keep conſtantly within ſight of them, without preſſing them too hard; they are particularly careful not to ſuffer them to feed, though not to diſturb them ſo much as to tempt them to make their eſcape by a ſudden flight. And the execution is the more eaſy, ſince they ſeldom hold a ſtraight courſe, but almoſt always deſcribe a circle. The Arabs therefore, tracing a ſmaller circle within the other, can always keep their proper diſtance, and yet paſs over much leſs ground. After a day or two, when the Oſtriches are worn out with fatigue and want of food, the horſemen ſuddenly dart upon them at full gallop, endeavouring as much as poſſible to drive them againſt the wind, and

and they kill them with the blows of a ſtick, that the blood may not ſpoil the fine white of the plumes. It is ſaid, that when they feel themſelves overcome, and unable to eſcape from the hunters, they conceal their head, and imagine that they cannot then be perceived; but that abſurdity muſt be aſcribed to thoſe who attempt to conjecture their intentions; it is evident that they only try to protect that part of their body at laſt, which is at once the weakeſt and the moſt eſſential.

The *Struthophagi* had another method of c[illegible]ng theſe animals: they covered themſelves with an Oſtrich's ſkin, and ſlipping their arms into the neck, they imitated all the ordinary motions of the Oſtrich itſelf, and thus were able to get near it and ſurpriſe it. In the ſame manner, the ſavages of America diſguiſe themſelves like roe-bucks, to catch the roe-bucks.

Dogs and nets alſo have been uſed, but it would ſeem that the horſe is moſt commonly employed; and this circumſtance alone is ſufficient to explain the antipathy which has been ſuppoſed to ſubſiſt between the horſe and the Oſtrich.

In running, it ſpreads its wings and the large feathers of its tail, not with the view to aſſiſt its motion, as I have already ſaid, but from the common effect of the correſpondence of muſcles; juſt as a man running throws about his arms, or an elephant that turns upon its hunter, erects and diſplays

diſplays its large ears. But the complete proof that the Oſtrich does not raiſe its feathers to increaſe its celerity is, that it ſpreads them, even when it runs againſt the wind; in which caſe they can only retard its progreſs. If we conſider that bulk and ſwiftneſs are combined in the Oſtrich, we muſt be convinced that they are extremely ſtrong; yet it preſerves the manners of the granivorous animals: it never attacks the weak, and ſeldom oppoſes the aſſaults of the ſtrong. Covered with a hard thick coat of leather, and furniſhed with a broad *ſternum*, which ſerves for a breaſt-plate, and defended by another callous breaſt-plate, it hardly feels the application of external blows; and it eſcapes from the greater and more ſerious dangers by the rapidity of its flight. If it ſometimes makes reſiſtance, it employs its bill, the points of its wings, and particularly its feet. Thevenot ſaw one which overthrew a dog by a blow of its foot. Belon ſays that it could run down a man; but that in its flight it throws ſtones at its purſuer. I doubt the fact, eſpecially as its velocity would only diminiſh that of the ſtones which it might throw, the two motions being oppoſite. Beſides, this fact, advanced by Pliny, and copied by many others, does not appear to be confirmed by any modern of credit, and it is known that Pliny poſſeſſed more genius than diſcernment.

Leo Africanus ſays, that the Oſtrich wants the ſenſe of hearing; yet we have already ſeen that

that it appears to have all the organs which give thoſe ſenſations; the aperture of the ears is even very wide, and is not obſtructed by feathers. It is probable therefore, that either like the grous, it is only deaf in the ſeaſon of love; or that what has been imputed to its deafneſs, is really the effect of ſtupidity.

It is moſt likely that this is the ſeaſon when its cry is heard: this happens ſeldom, for few perſons have mentioned it. The ſacred writers compare its cry to moaning, and it is even pretended that its Hebrew name *jacnah* is derived from *ianah*, which ſignifies *to howl*. Dr. Brown ſays, that it reſembles the wailing of a hoarſe child, and is ſtill more plaintive; how gloomy is it then, and even terrible, to uſe the expreſſion of Sandys, to travellers who penetrate with timorous apprehenſions into the immenſity of theſe deſerts, where every living being, man not excepted, is an object of dread and danger!

The TOUYOU.

Struthio Rhea, Linn. Gmel. Borowſk.
Rhea Americana, Lath. Ind.
Rhea, Briſſ.
Struthio Nothus, Klein.
Struthio-camelus Americanus, Ray and Will.
Struthio Emeu, Nieremb.
Nhandaguacu Braſilienſis, Marcg. and Piſo.
The American Oſtrich, Will. Damp. Lath.

WHAT is called the Oſtrich of South America, or the *Oſtrich of the Straits of Magellan and Guiana*, is quite different from the Oſtrich; and Le Maire is, I believe, the firſt traveller, who, deceived by ſome traces of reſemblance to that African bird, has given it the ſame name. Klein, who perceived that it was of another ſpecies, is contented with calling it *the Baſtard Oſtrich*. Barrere has ſometimes termed it the *Heron*, ſometimes the *ferrivorous Crane*, and ſometimes the *Long-necked Emeu*. Others have with more accuracy applied a compound name, expreſſive of ſeveral of its qualities, *the Gray Caſſowary with the Oſtrich-bill*. Moehring and Briſſon prefer the Latin name *rhea*, to which the latter annexes the American epithet *Touyou*, formed from *Touyouyou*, by which it is generally known in Guiana. The ſavages ſettled in other parts of the continent

have given it different names: *Yardu*, *Yandu*, *Andu*, and *Nandu-guacu*, in Brazil *; *Sallian* in the iſland of Maragnan †; *Suri* in Chili, &c. So many names have been beſtowed on an animal with which we were ſo lately made acquainted! For my part, I ſhall readily adopt that of *Touyou*, which Briſſon has applied or rather retained, and I ſhall not heſitate to prefer this barbarous word, which has probably ſome analogy with the voice or cry of that bird, to the ſcientific terms, which only ſerve to convey falſe notions, and to new names, which mark no character, no eſſential property of the animal on which they are beſtowed.

Briſſon ſeems to imagine that Aldrovandus meant to figure this bird by the name of *Avis Eme;* and it is true that we find, in the 541ſt page of vol. iii. of his Ornithology, a plate which repreſents the Touyou and the Caſſowary, according to the two plates of Nieremberg, and that it is inſcribed in large characters with the words AVIS EME; in the ſame manner as the figure of the Touyou in Nieremberg bears the name of *Emeu*. But it is obvious that theſe two titles have been added by engravers or printers who were little acquainted with the views of the authors: for Aldrovandus does not mention a ſingle word of the Touyou, and Nieremberg only

* Nieremberg, Marcgrave, and Piſo.

† Hiſt. Gen. des Voyages, tome xiv.

calls

calls it *Yardou*, *Suri*, and the *Occidental Oſtrich*; and both, in their deſcription, apply the names *Eme* and *Emeu* to the Caſſowary of Java alone. In ſhort, to avoid confuſion of names, the *Eme* of Aldrovandus and the *Emeu* of Nieremberg ought henceforth to be excluded from the ſynonyms of the *Touyou*. Marcgrave ſays, that the Portugueſe call it *Ema* in their language; but the Portugueſe, who had often viſited the Eaſt Indies, were acquainted with the *Emeu* of Java, and applied that name to the Touyou of America, which was more analogous to it than any other bird; for the ſame reaſon that we have applied the term *Oſtrich* to the ſame *Touyou*. We muſt therefore conſider it as an eſtabliſhed point, that the *Emeu* belongs excluſively to the Caſſowary of the Eaſt Indies, and has no relation to the Touyou, or any other American bird.

In this detail of the different names of the *Touyou*, I have in part pointed out the different countries where it is found. It is a native of South America, but is not equally common in every province of that extenſive country. Marcgrave informs us, that it is ſeldom ſeen in the vicinity of Fernambuca, and is equally rare in Peru, and along the moſt populous coaſts; but it is more frequent in Guiana *; in the ſeignories of Seregippe and of Rio-grande; in the

* Barrere.

interior

interior provinces of Brazil *; in Chili †; in the vaſt foreſts ſituated north from the mouth of the De la Plata ‡; and in the vaſt ſavannas which ſtretch on the ſouth of that river, and in all the *terra Magellanica*, as far as Port Deſire, and even to the coaſt bordering on the ſtraits of Magellan §. Formerly ſome diſtricts in Paraguay ſwarmed with theſe birds, eſpecially the plains watered by the Uraguay; but as the inhabitants multiplied, they killed great numbers, and forced the reſt to retire. Captain Wood aſſures us, that though they abound on the northern coaſt of the Straits of Magellan, there is not one to be found on the ſouthern ſhore: and notwithſtanding Coreal's affirming that he ſaw them on the iſlands in the South Sea, theſe ſtraits ſeem to bound the climate ſuited to the Touyou, as the Cape of Good Hope terminates the region of the Oſtrich; and the iſlands where Coreal ſaw the Touyous were probably contiguous to the eaſtern ſhores of America, beyond the Straits of Magellan. It alſo appears that the Touyou, which, like the Oſtrich, delights in the heat of the torrid zone, is yet not ſo much affected by cold; for the promontory which runs into the Straits of Magellan is nearer the Pole, than the Cape of Good Hope, or any other climate, where the Oſtrich

* Marcgrave. † Hiſt. des Gen. Voyages, tome xiv.
‡ Hiſt. des Incas. § Wafer.

has ſpontaneouſly fixed its reſidence: but, as according to all accounts, the Touyou is alſo, like the Oſtrich, entirely a terreſtrial bird, and incapable of flying; and as South America is ſeparated from the ancient continent by immenſe oceans; it would follow that we ought not to expect to find Touyous in our continent, any more than to diſcover Oſtriches in America: and this inference agrees with the teſtimony of travellers.

The Touyou, though ſomewhat inferior to the Oſtrich, is yet the largeſt bird in the New World, the full grown ones being ſix feet high *. Wafer, who meaſured the thigh of one above the ordinary ſize, found it almoſt equal to that of a man. It has the long neck, the ſmall head, and the flat bill of the Oſtrich; but in other reſpects, it reſembles the Caſſowary. I find even in the hiſtory of Brazil, written by the Abbe Prevot †, but no where elſe, mention made of a kind of horn which this bird has on its bill, and which, if it really exiſted, would be another point of analogy with the Caſſowary.

Its body is of an oval ſhape, and, when cloathed with all its feathers, appears almoſt entirely round. Its wings are very ſhort, and of no uſe

* In the figure that Nieremberg gives, there is a ſort of cap on the crown of the head, which reſembles the hard callous ſkin that, according to Dr. Brown, is found on the ſame part of the Oſtrich: but no mention is made of this cap in Nieremberg's deſcription, or in any other.

† Hiſt. Gen. des Voyages, tome xiv.

in

in flying; though they are ſaid to aſſiſt it in running. It has on the back and about the rump long feathers, which fall back, and conceal the *anus*, and it has no other tail. Its plumage is all gray on the back, and white on the belly. It is very tall, having three toes to each foot, all anterior; for we cannot conſider as a toe that callous round tubercle placed behind, and on which the foot reſts as on a claw. To this conformation is imputed the difficulty with which it ſtands on a ſmooth ſurface, and of walking on it without falling; in compenſation, however, it runs very ſwiftly in open ground, raiſing ſometimes one wing, ſometimes another, but for purpoſes that have not yet been well aſcertained. Marcgrave ſuppoſes, that it is with the view of ſpreading a ſort of ſail to catch the wind; Nieremberg, that it is to throw the ſcent from the dogs which purſue it; Piſo and Klein, that it is to change frequently the direction of its courſe, by theſe zig-zags to avoid the arrows of the ſavages; and others imagine, that it ſeeks to increaſe its ſpeed by pricking itſelf with a kind of needle with which its wings are armed *. But whatever be the intention of the Touyous, certain it is that they run with aſtoniſhing velocity, and that it is difficult for any hound to overtake

* It muſt be obſerved that neither Piſo, Marcgrave, nor any who ever ſaw the Touyou, take the leaſt notice of this wing-ſpur; and it is not unlikely that it was beſtowed merely from the analogy ſuppoſed to ſubſiſt between it and the African Oſtrich.—What miſtakes are occaſioned by the confuſion of names?

them. It is related of one, that perceiving itſelf ſtopt, it darted with ſuch rapidity as diſengaged itſelf from the dogs, and eſcaped to the mountains*. It being impoſſible to outſtrip them by agility, the ſavages are obliged to employ addreſs, and to lay ſnares for catching them †. Marcgrave ſays, that they live on fleſh and fruits; but if they had been obſerved with attention, it would undoubtedly have been diſcovered which of theſe two kinds of aliments they prefer. For want of facts, we may conjecture that theſe birds having the ſame inſtinct with the Oſtriches, and other frugivorous animals, viz. that of ſwallowing ſtones, iron, and other hard ſubſtances, that they are alſo frugivorous, and that if they ſometimes eat fleſh, it is either becauſe they are preſſed by hunger, or, like the Oſtrich, their ſenſes of taſte and ſmell being only in an inferior degree, they ſwallow indiſcriminately whatever comes in their way.

Nieremberg relates very ſtrange ſtories in regard to their mode of propagation. According to this writer, the male performs the office of hatching the eggs; for this purpoſe he aſſembles twenty or thirty females to lay in the ſame neſt, and after they have depoſited their eggs, he drives them forcibly away, and covers them himſelf, taking the ſingular precaution however to remove two of the eggs from the neſt; theſe two

* Navigations aux Terres Auſtrales.

† Hiſtoire Gen. des Voyages, tom. xiv.

become

become addle, which the male perceiving, breaks one of them, which invites a multitude of flies, beetles, and other ſmall inſects, on which the young Touyous feed; and after the firſt is conſumed, he opens another for the ſame purpoſe. But all this may happen, without recurring to an extraordinary ſuppoſition; the addle eggs may be cruſhed by accident, and inſects attracted, which ſometimes ſerve to nouriſh the young Touyous. We can ſuſpect here the intention of the parent only; for theſe intentions, which we liberally impute to animals, always form the romance of natural hiſtory.

With reſpect to the aſſertion, that the male takes upon himſelf, to the excluſion of the females, the care of hatching, I am much inclined to doubt the fact, conceive it as not authentic, and as inconſiſtent with the order of nature. But it is not enough to point out the cauſes of error; we ought, as much as we are able, to diſcover the cauſes of it, which ſometimes lead us alſo to the truth. I ſhould therefore imagine that this report is occaſioned by the finding of teſticles in ſome fitters; and perhaps an appearance of the *penis*, as is obſerved in the female Oſtrich, which ſeemed to evince it to be a male.

Wafer ſays, that he ſaw in a deſert tract ſituated on the north of the De la Plata, about the thirty-fifth degree of ſouth latitude, a number of the eggs of the Touyou in the ſand, where, according to him, theſe birds left them to hatch.

If this fact be true, the deſcription which Nieremberg gives with reſpect to the incubation of theſe eggs, can only refer to a climate that is colder, and nearer the pole. In fact, the Dutch found near Port Deſire, which is in the forty-ſeventh degree of ſouth latitude, a Touyou that was ſitting, which they chaced away, and reckoned nineteen eggs in the neſt. It is for the ſame reaſon that the Oſtriches ſeldom or never hatch at all in the torrid zone, but cover their eggs at the Cape of Good Hope, where the heat of the climate is inadequate to the effect.

When the young Touyous are newly excluded from the ſhell, they are very familiar, and follow the firſt perſon whom they meet *; but as they grow up, they acquire experience, and become ſhy †. It appears that in general their fleſh is pleaſant to eat; though that of the old ones indeed is tough, and of a bad flavour. This fleſh might be improved by raiſing flocks of young Touyous, which would be eaſy, conſidering their aptneſs to be tamed; and, by fattening them, and uſing the precautions which have ſucceeded with the turkey, which alſo de-

* "I have myſelf," ſays Wafer, "been followed by many of theſe young Oſtriches, which are inoffenſive and unſuſpicious." DAMPIER.

† "There is a great number of Oſtriches in this iſland of Port Deſire, which are very wild." *Voyage des Hollandois aux Indes Orientales.*—"I ſaw at Port Deſire three Oſtriches, though I could not get near enough to fire at them; as ſoon as they perceived me they fled." *Navig. aux Terres Auſtrales.*

rives

rives its origin from the warm and temperate countries on the continent of America.

Their feathers are far from being ſo beautiful as thoſe of the Oſtrich; and Correal even aſſerts that they are totally uſeleſs. It is to be wiſhed, that inſtead of telling us their little value, travellers had given us a preciſe idea of their texture.—Too much has been written on the Oſtrich, and too little on the Touyou. In giving a hiſtory of the former, the chief difficulty conſiſts in collecting all the facts, in comparing the relations, in diſcuſſing the opinions, and in ſeparating the truth from a heap of rubbiſh. To diſcourſe on the Touyou, we muſt often conjecture what *is*, from what *may be*; we are obliged to comment, to interpret, to ſupply; and when facts cannot be had, to ſubſtitute what is probable in their ſtead; and, in a word, to remain in ſuſpence till future obſervations can be procured to ſupply the blanks in its hiſtory. [A]

[A] The ſpecific character of the Touyou, *Struthio Rhea*, LINN. is, that "the foot has three toes, the hind one rounded." LATHAM makes it a genus of which only one ſpecies, the *Americana*, is known. "The *bill* is ſtraight, depreſſed, and roundiſh at the tip; the *wings* are unfit for flying; the lower part of the *thighs* naked; the *feet* are furniſhed with three toes before, and behind with a round callous bump."

The GALEATED CASSOWARY.

Le Caſoar, Buff.
Struthio Caſſuarius, Linn. and Gmel.
The Caſſowary, or *Emeu*, Will. Ray, Briſ. Klein, &c.

THE Dutch are the firſt who ſhewed this bird in Europe; they brought it, in 1597, from the iſland of Java, on their return from the firſt voyage which they performed to the Eaſt Indies*. The natives of the country call it *Eme*, from which the French have formed the word *Emeu*. It was alſo named *Caſſowary*, which I have adopted, ſince it has been appropriated to this bird.

The Galeated Caſſowary, though not ſo large as the Oſtrich, is apparently more bulky; becauſe its maſs is nearly the ſame, and its neck and feet are ſhorter and thicker in proportion; and its body is more protuberant, which gives it a heavier look.

The one deſcribed by the Academicians was five feet and a half long, from the point of the bill to the extremity of the claws; that obſerved by Cluſius was a fourth ſmaller. Houtman reckons it double the bulk of the ſwan; and other Dutchmen mention it as of the ſize of a

* *Hiſt. Gen. des Voyages, tome* viii. and CLUSIUS, *Exotic.*

ſheep.

ſheep. This variety of meaſures, ſo far from affecting the truth, is what alone informs us of the real magnitude of the Galeated Caſſowary; for the ſize of an individual is not that of the ſpecies, and to eſtimate that properly, we muſt conſider it as a quantity varying between certain limits. Hence a naturaliſt who compares with judgment the deſcriptions of different obſervers, will have more preciſe and accurate ideas of the ſpecies, than an obſerver who is only acquainted with a ſingle individual.

What is moſt remarkable in the figure of the Galeated Caſſowary, is that kind of conical helmet, the fore-part of which is black, and the reſt yellow, which covers the face from the bottom of the bill to the middle of the crown of the head, and ſometimes ſtretches farther. This helmet is formed by the protuberance of the bones in that part of the cranium, and is ſheathed by a hard covering, conſiſting of ſeveral concentric plates analogous to the ſubſtance of an ox's horn. Its entire ſhape reſembles a truncated cone, three inches high, an inch diameter at the baſe, and three lines at its vertex. Cluſius thought that this helmet dropped every year with the feathers, in the ſeaſon of moulting; but the Academicians have properly obſerved, that the external ſheath only could thus fall, and not the inner ſubſtance, which, as we have ſaid, forms a part of the bones of the ſkull; and they even add, that during the four years that

this bird was kept in the *menagerie* at Verſailles, they could not perceive that this ſheath was ever detached. However, this might have happened through length of time, and by a kind of ſucceſſive exfoliation, as in the bill of many birds; and this proceſs might have eſcaped the obſervation of the keepers of the *menagerie*.

The iris is of a topaz-yellow, and the cornea is remarkably ſmall, compared with the ball of the eye*, which gives the animal a ſtrange wild appearance; the lower eye-lid is the largeſt, and the upper is ſet in the middle with a row of ſmall black hairs, which form an arch over the eye like the brow, and this, together with the opening of the bill, produces a threatening aſpect. The exterior orifices of the noſtrils are ſeated very near the point of the upper bill.

In the bill we muſt diſtinguiſh the materials which ſerve to cover it. They are three ſolid pieces, two of which form the circumference, and the third conſtitutes the upper ridge, which is much more elevated than in the Oſtrich; the three are ſheathed with a membrane which fills up the interſtices.

The upper and lower mandibles of the bill have their edges a little furrowed near the end, and ſeem each of them to have three points.

* The ball of the eye was one inch and a half in diameter; the cryſtalline lens four lines, and the cornea only three lines. *Mem. pour ſervir a l'Hiſt. des Anim.*

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The head and the arch of the neck are ſprinkled with a few ſmall feathers, or rather with ſome black ſtraggling hairs; ſo that on theſe parts the ſkin appears bare. The colours and their diſpoſitions are various; commonly blue on the ſides, violet under the throat, red behind in many parts, but eſpecially in the middle of the neck; and theſe red parts are more prominent than the reſt, on account of wrinkles, or oblique furrows.

The holes of the ears were very large in the Galeated Caſſowary deſcribed by the Academicians; very ſmall in the one deſcribed by Cluſius; but in both they were diſcloſed, and beſet like the eyelids with ſmall black hairs.

Near the middle of the fore-part of the neck, and where the great feathers have their origin, riſe two barbels which are red and blue, and round at the ends, and which Bontius places in his figure immediately above the bill, as in poultry. Friſch delineates four; two long ones on the ſides of the neck, and two before that are ſmaller and ſhorter: the helmet alſo appears larger in his figure, and approaches the ſhape of a turban. There is in the king's cabinet a head which ſeems to be that of the Galeated Caſſowary, but which has a tubercle different from what is ordinary. It will require time and obſervation to aſcertain whether theſe varieties, and thoſe which we ſhall afterwards mention, be conſtant or not; if ſome of them be not owing

owing to the inaccuracy of the deſigners, or are only ſexual differences. Friſch pretends that he diſcovered in two ſtuffed Galeated Caſſowaries, the diſtinguiſhing marks between the males and females; but he does not inform us in what theſe conſiſt.

The wings of the Galeated Caſſowary are ſtill ſmaller than thoſe of the Oſtrich, and equally unfit for flying. They are armed with points, and theſe are even more numerous than in the Oſtrich. Cluſius found four or five of them; the Academicians five; and in Friſch's figure there are evidently ſeven: theſe are like the pipes of feathers, and appear red at the end, and are hollow through their whole extent. They contain within their cavity a ſort of marrow ſimilar to what is found in the ſprouting feathers of other birds. The middle one is near a foot in length, and about three lines in diameter, it being the longeſt of all: thoſe placed on either ſide diminiſh gradually like the fingers of the hand, and nearly in the ſame order. Swammerdam uſed them inſtead of a pipe to inflate very delicate veſſels, ſuch as the *tracheæ* of inſects, &c. It has been ſaid, that the wings of the Caſſowary were intended to accelerate its motion; others have conjectured that they only ſerved them like ſwitches to aſſiſt them in ſtriking; but no one can aſſert that he ever ſaw what uſe the bird really makes of them. The Caſſowary has alſo another property common to the

the Oſtrich, viz. it has but one kind of feathers over its whole body, wings, rump, &c. though moſt of theſe feathers are double, each root ſending off two branches of different lengths: nor is the ſtructure uniform throughout; the branches being flat, black, and ſhining, divided underneath into knots, each of which produces a beard or thread, with this difference, that from the root to the middle of the branch, theſe threads are ſhorter, more pliant, ramify more, and are covered with a kind of tawny down; whereas, from the middle of the ſame branch to its extremity, they are longer, harder, and of a black colour, and as theſe laſt cover the others, and are the only ones that appear, the Caſſowary ſeen at a diſtance reſembles an animal clothed with hair, like bears or wild boars. The ſhorteſt feathers are on the neck, the longeſt round the rump, and the middle ſized on the intermediate ſpace. Thoſe of the rump are fourteen inches long, and hanging over the hinder part of the body, they ſupply the place of the tail, which is totally wanting.

It has, like the Oſtrich, a naked and callous ſpace on the *ſternum*, where the weight of the body reſts when the bird ſits; and this part is ſtill more prominent in the Galeated Caſſowary than in the Oſtrich *.

The thighs and legs are clothed with feathers almoſt to the knees, and theſe feathers were of

* Voyages de la Compagnie Hollandoiſe.

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an aſh-gray in the ſubject which Cluſius examined; the feet, which are thick and ſtout, have three toes, and not four, as Bontius affirms; all of them directed forwards. The Dutch relate, that the Galeated Caſſowary employs its feet for defence; ſtriking backwards like a horſe, according to ſome; and according to others, darting forwards againſt the aſſailant, it throws him back with its feet, and ſtrikes his breaſt with violent blows. Cluſius, who ſaw one alive in the gardens of Count Solms at the Hague, ſays, that it makes no uſe of its bill for protection, but that it attacks its antagoniſt ſideways, by kicking; he adds, that this Count ſhewed him a tree about the thickneſs of his thigh which this bird had ſpoiled, having ſtripped off the bark entirely with its feet and nails. The Caſſowaries kept in the *menagerie* at Verſailles have not indeed been obſerved to be ſo ſtrong or ſo miſchievous, but perhaps they were grown tamer than that of Cluſius: beſides, they lived in abundance and in cloſer captivity; circumſtances which in time meliorate the diſpoſitions of ſuch animals as are not altogether wild, enervate their courage, blunt their original inſtincts, and render it impoſſible to diſtinguiſh theſe from their acquired habits.

The claws of the Caſſowary are very hard, black on the outſide, and white on the inſide. Linnæus ſays, that they ſtrike with the middle claw, which is the largeſt; yet the deſcriptions and figures of the Academicians and of Briſſon repreſent

repreſent the inner claw as the largeſt, which is really the caſe.

Its gait is ſingular; it appears to kick behind, at the ſame time it makes a kind of leap forwards. But however ungraceful its motion may be, it is ſwifter, we are told, than the beſt runner: indeed celerity of motion is ſo peculiarly the property of birds, that the tardieſt of that tribe excel in the rapidity of their courſe the moſt agile of the land animals.

The Caſſowary has the tongue indented along the edges, and ſo ſhort, that it has been ſaid of it, as the moor cock, that it has none. The one obſerved by Perrault was only an inch long, and eight lines broad *. It ſwallows any thing that is thrown to it; that is, any ſubſtance which its bill will admit. Friſch juſtly conſiders this inſtinct as indicating an analogy to the gallinaceous tribe, which ſwallow their aliments entire, without bruiſing them with their bills; but the Dutch, who ſeem to have wiſhed to make the hiſtory of this ſingular bird ſtill more extraordinary by the addition of the marvellous, have not heſitated to aſſert, that it ſwallows ſtones, bits of iron, glaſs, &c. and even burning coals, without ſuffering inconvenience †.

It is alſo ſaid they eject very ſoon what they have taken, and ſometimes diſcharge apples as

* Mem. pour ſervir à l'Hiſtoire des Animaux.
† Hiſt. Gen. des Voyages, tome viii.

large

large as the hand, and in the ſame ſtate in which they were ſwallowed. Indeed, the inteſtinal canal is ſo ſhort, that the aliments muſt ſoon paſs through it; and ſuch as, by their hardneſs, might occaſion ſome reſiſtance, muſt undergo little alteration in ſo ſmall a deſcent, particularly when the functions of the ſtomach are deranged by any diſeaſe. Cluſius was aſſured, that in theſe caſes, they ſometimes ejected hen-eggs, which they are fond of, and quite entire with their ſhell; but, on ſwallowing them a ſecond time, they completely digeſted them *. The principal food of this bird, which was the Caſſowary belonging to Count Solms, was white bread cut into ſmall bits, which proves that it is frugivorous, or rather omnivorous, ſince it really eats whatever is offered it, and has the craw and the double ſtomach of the animals that live on vegetable ſubſtances, and at the ſame time it has the ſhort inteſtines of ſuch as feed on fleſh. The inteſtinal canal of the one diſſected by the Academicians was four feet eight inches long, and two inches diameter through its whole extent. The *cæcum* was double, and only one line in diameter, and three, four, or five inches long. From this account it appears, that the inteſtines of the Galeated Caſſowary are thirteen times ſhorter than thoſe of the Oſtrich; and for this reaſon, it muſt be ſtill more voracious, and ſtill more diſpoſed to animal food, which could be

* Cluſius. *Exotic.*

aſcertained

aſcertained if obſervers, inſtead of reſting ſatiſfied with examining the dead bodies, would ſtudy the habits of the bird while alive.

The Caſſowary has a gall-bladder; and its duct, which croſſes the hepatic, terminates higher than that in the *duodenum*, and the pancreatic duct is inſerted above the cyſtic; a conformation of parts quite different from what obtains in the Oſtrich. The organs of generation in the male are not ſo diſſimilar: the *penis* riſes from the upper part of the *rectum*; its form is that of a triangular pyramid, two inches broad at the baſe, and two lines at the *apex*; it conſiſts of two ſolid cartilaginous ligaments, connected cloſely to each other above, but parted below, and leaving between them a half-channel covered with ſkin. The *vaſa deferentia* and the ureters have no apparent communication with the perforation of the *penis*; ſo that this part, which ſeems to fill four principal offices in the quadrupeds, that of carrying off the urine, that of conveying the ſeminal fluid to the female womb, that of contributing by its ſenſibility to the emiſſion, that of ſtimulating the female to melt in the embrace, ſeems in the Caſſowary and the Oſtrich to be confined to the two laſt, which are calculated to excite in the two ſexes the neceſſary correſpondence of motion in the venereal act.

Cluſius was informed that, when the animal is living, the *penis* ſometimes is obſerved to

project from the *anus*; another point of analogy with the Oſtrich.

The eggs are of an aſh-gray, verging on greeniſh, not ſo thick, but longer than thoſe of the Oſtrich, ſprinkled with a multitude of ſmall tubercles of a deep green; the ſhell is not very thick according to Cluſius who ſaw ſeveral of them; the largeſt of all thoſe which had fallen under his notice was fifteen inches round one way, and a little more than twelve the other *.

The Caſſowary has the lungs and the ten air cells as in other birds, particularly thoſe of the large kind; it has that ſcreen or black membrane peculiar to the eyes of birds, and that inner eyelid, which, as it is well known, is attached to the large angle of the eye by two common muſcles †, and which is at momentary intervals drawn back over the *cornea*, by the action of a kind of muſcular pulley, which merits all the curioſity of anatomiſts ‡.

The middle of the eaſtern part of Aſia ſeems to be the true climate of the Caſſowary, and its territory begins where that of the Oſtrich ends. The latter ſeldom paſſes beyond the Ganges, as we have already ſeen; but the former is found in the Molucca iſlands, and in thoſe of Banda, Java, Sumatra, and the correſponding tracts on

* "Eggs with excavated points," is Linnæus's expreſſion, which is totally different from what Cluſius aſſerts.

† Hiſt. de l'Acad. Royal des Sciences, tome ii.

‡ Mem. pour ſervir à l'Hiſt. des Anim.

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the continent *. It is however far from being ſo numerous as the Oſtrich, ſince a king of Joardam in the iſland of Java preſented Scellinger, the captain of a Dutch veſſel, with a Caſſowary as a rare bird. The reaſon probably is, becauſe the Eaſt Indies are much more populous than Africa; and it is well aſcertained, that as men multiply, the wild animals gradually diminiſh, or retire into the more ſolitary tracts.

It is ſingular, that the Caſſowary, the Oſtrich, and the Touyou, which are the three largeſt birds that are known, are all natives of the torrid zone, which they ſeem to ſhare among themſelves, each enjoying its own territory, without incroaching on that of another. They are really all of them land animals, incapable of flying, but running with aſtoniſhing ſwiftneſs; all ſwallowing whatever comes in their way, grain, graſs, fleſh, bones, ſtones, flints, iron, glaſs, &c. In all, the neck is of great length, the legs tall and very ſtrong, the claws fewer than in moſt birds, and in the Oſtrich, there are ſtill fewer than in the other two; in all, there is only one ſort of feathers, unlike thoſe of other birds and different in each of the three kinds; in all, the head and the arch of the neck are bare, the tail, properly ſo called, is wanting, the wings are but imperfect, furniſhed with a few pipes, without any vanes, as the quadrupeds that in-

† Voyages des Hollandois.

habit the warm countries have leſs hair than thoſe of the regions of the north. All of them, in a word, ſeem to be natural productions of the torrid zone. But notwithſtanding theſe points of agreement, they are ſtill marked by characters that diſtinctly ſeparate the ſpecies; the Oſtrich is removed from the Galeated Caſſowary and the Touyou, by its ſize, by its feet, like thoſe of the camel, and by the nature of its plumage: it differs from the Caſſowary particularly by its naked thighs and flanks, by the length and capacity of its inteſtines, and becauſe it has no gall-bladder; and the Galeated Caſſowary differs from the Touyou and the Oſtrich, by its thighs being clothed with feathers, almoſt to the *tarſus*, by red barbils which hang from the neck, and alſo by the helmet on its head.

But in this laſt diſtinctive character we ſtill perceive an analogy with the other two kinds; for this helmet is nothing but a protuberance of the bones of the cranium, which is covered with a ſheath of horn; and we have ſeen, in the hiſtory of the Oſtrich and the Touyou, that the upper part of the cranium of theſe two animals was ſimilarly defended by a hard callous plate. [A]

[A] The ſpecific character of the Galeated Caſſowary in the Linnæan ſyſtem is, that "it has three toes, with the helmet and "barbils naked." Latham erects the Caſſowary into a new genus, diſtinguiſhed by theſe properties: the *bill* depreſſed, ſtraight, and ſomewhat conical; the noſtrils oval; the *wings* very ſhort, and unadapted

adapted for flying; the lower part of the *thighs* naked; the *feet* conſiſting of three toes, all of them turned forwards; the *tail* wanting. The Galeated Caſſowary has the epithet of *Emeu*, and is diſcriminated by being "black, its top helmeted, its body beſet with "ſhaggy feathers, its head and top of the neck bare."

A new ſpecies of Caſſowary has lately been diſcovered at Botany Bay, and termed the *New Holland* Caſſowary. It is much larger than the former, being ſeven feet two inches long, while the other is only five feet and a half. It runs exceeding ſwiftly, and its fleſh is palatable food. Latham thus characterizes it:—"It is "blackiſh, its crown flat, its body briſtly, its head and neck planted "with quills, its legs ſerrated behind."—The bill is black; the head, the neck, and the whole of the body, covered with quills, which are variegated with duſky and gray colours; the throat is bare and bluiſh; the quills on the body are a little bent at the point; the feet are duſky, and behind they are rough through their whole length with protuberances.

The HOODED DODO.

Le Dronte, Buff.
Didus Ineptus, Gmel. and Lath.
Struthio Cucullatus, Linn. 10th edit.
Raphus, Briſſ.
Cygnus Cucullatus, Nierem. Ray and Will.
Gallus Gallinaceus Peregrinus, Cluſ.
Dod-Aerſen, or *Walgh-Vogel*, Herb.

AGILITY is commonly conceived to be peculiarly the property of the winged tribe; but if we regard it as an eſſential character, the Dodo muſt be excluded from the claſs; for its proportions and its movements give an idea of the moſt heavy and awkward of organized beings. Figure to yourſelf a body that is bulky, and almoſt cubical, ſupported with difficulty on two exceedingly thick and ſhort pillars, and carrying a head ſo ſtrangely ſhaped, that we might take it for the whim of a caricature painter; and this head, reſting on a huge ſwelling neck, conſiſts almoſt entirely of an enormous beak, in which are ſet two large black eyes encircled with a ring of white, and where the parting of the mandibles runs beyond the eyes, and almoſt quite to the ears; theſe two mandibles, concave in the middle, inflated at both ends, and bent backwards at the point, reſemble two ſharp ſpoons laid on each other, their convexity being turned outwards: all which produces a ſtupid vora-

voracious appearance, and which, to complete the deformity, is furniſhed with an edging of feathers, which, accompanying the curvature of the baſe of the bill, ſtretch to a point on the forehead, and then arch round the face like a cowl, whence the bird has received the name of *Capuchined Swan (Cygnus Cucullatus)*.

Magnitude, which in animals implies ſtrength, produces nothing in this bird but oppreſſive weight. The Oſtrich, the Touyou, and the Galeated Caſſowary, indeed, are alſo incapable of flying, but they run with aſtoniſhing ſpeed. The Dodo ſeems to be clogged by its unwieldy carcaſs, and can hardly collect force ſufficient to drag it along. It is the moſt inactive of the feathered race. It conſiſts, we might ſay, of brute paſſive matter, where the living organic particles are too ſparingly diſſeminated. It has wings; but theſe are too ſhort and too feeble to raiſe it from the ground. It has a tail, but it is diſprotioned, and out of place. We might take it for a tortoiſe diſguiſed in the clothing of the winged tribe; and Nature, in beſtowing theſe uſeleſs ornaments, ſeems to have deſired to add clumſineſs to its unwieldy maſs, and to render it more diſguſting, by reminding us at the ſame time that it is a bird.

The firſt Dutch that ſaw it in the iſland of Mauritius, now the Iſle of France*, named it

* The Portugueſe had before called that iſland *Ilha do Cirne*; that is, *Iſland of Swans*; probably becauſe of the Hooded Dodos they had ſeen on it, and which they had miſtaken for ſwans.

Walgh-Vogel, *Diſguſting Bird*, both on account of its ugly figure, and the rank ſmell. This ſingular bird is very large, and is only inferior in ſize to the three preceding; for it exceeds the turkey and the ſwan.

Briſſon aſſigns as one of the characters, its having the lower part of the legs naked; yet in the 294th plate of Edwards it is repreſented feathered, not only as low as the leg, but even to the articulation with the tarſus. The upper mandible is blackiſh throughout, except at the hook, where there is a red ſpot; the holes of the noſtrils are placed very near its middle, and cloſe to the two tranſverſe folds, which riſe at this part on the ſurface.

The feathers of the Dodo are in general very ſoft, and their predominating colour is gray, which is deeper on all the upper part of the body and the lower part of the legs, but brighter on the ſtomach, the belly, and the whole of the under part of the body. There is ſome yellow and white on the quill-feathers of the wings, and thoſe of the tail, which appear frizzled, and are but few in number. Cluſius reckons only four or five.

The feet and toes are yellow, and the nails black; each foot has four toes, three of which are placed before, and the fourth behind, and this hind one has the longeſt nail.

Some have pretended that there was commonly lodged in the ſtomach of the Dodo a ſtone

ſtone of the ſize of the hand, and to which they failed not to aſcribe the ſame origin and the ſame virtues as to the bezoars. But Cluſius, who ſaw two of theſe ſtones of different ſhapes, and bulky, is of opinion, that the bird had ſwallowed them like the granivorous claſs, and that they were not formed in its ſtomach.

The Dodo is a native of the iſlands of France and Bourbon, and is probably found alſo on the neareſt parts of the continent, though I know of no traveller who mentions his ſeeing it, except on theſe iſlands.

Some Dutch call it *Dodàers;* and the Portugueſe and Engliſh, *Dodo;* however, it is named by the natives *Dronte.* It has alſo been called *Hooded Dodo*, *Foreign Cock*, *Walgh-Vogel;* and Mæhring, who has found none of theſe names to his liking, has formed that of *Ruphus*, which Briſſon has adopted for his Latin deſignation, as if there was any advantage in giving the ſame animal a different appellation in each language, when the real effect of the multitude of ſynonyms is to occaſion embarraſſment and confuſion. "Do not multiply exiſtences," was once the maxim of philoſophers; but at preſent we have conſtantly reaſon to remind naturaliſts not to multiply names without neceſſity. [A]

[A] Linnæus makes the Dodo generic, and to include three ſpecies, viz. The Hooded Dodo of this article, the Solitary Bird, and the Nazarene Bird. The two latter are joined together in the following article. The Hooded Dodo has the epithet *Ineptus*, and is characterized by being "black with whitiſh clouds, and its feet "having four toes."

The SOLITARY DODO, and NAZARENE DODO.

Le Solitaire, et *L'Oiſeau de Nazare*, Buff.
Didus Solitarius, et *Didus Nazarenus*, Gmel.

THE Solitary Bird mentioned by Leguat * and Carré †, and the Bird of Nazareth by Father Cauche ‡, ſeem to bear a great reſemblance to the Dodo, though they ſtill differ in ſeveral points. I have thought proper to produce what theſe travellers relate on this ſubject, ſince, if theſe three names are applicable only to the ſame individual ſpecies, the different relations will ſerve to complete the hiſtory of the bird; if on the contrary, they refer to three different ſpecies, what I ſhall give will be conſidered as the beginning of the hiſtory of each, or at leaſt as an intimation of a new ſpecies to be examined, in the ſame manner as it is uſual in geographical charts to mark countries unexplored. At all events, it is to be deſired that thoſe naturaliſts, who have an opportunity of examining theſe birds more cloſely, would compare them if poſſible, and obtain a more preciſe and

* Voyage en Deux Iles Deſertes des Indes Orientales.
† Hiſt. Gen. des Voyag.
‡ Deſcription de l'Ile de Madagaſcar.

diſtinct

diſtinct information. Queries alone, made with reſpect to facts with which we are unacquainted, have more than once led to a diſcovery.

The Solitary Dodo of the iſland of Rodrigue is a very large bird, ſince ſome males weigh forty-five pounds. The plumage of theſe is commonly mixed with gray and brown; but in the females, ſometimes brown, ſometimes a light yellow, predominates. Carré ſays, that the colour of the plumage of theſe birds is gloſſy, bordering on yellow; he adds, that it is exceedingly beautiful.

The females have a protuberance over the bill reſembling a widow's peak; their feathers bunch out on both ſides of the breaſt into two white tufts, ſomewhat like a woman's boſom. The feathers of the thighs are rounded towards the end in the ſhape of ſhells, which has a very fine effect; and, as if the females were conſcious of their beauty, they take great pains in arranging their plumage, ſmoothing it with their bill, and adjuſting it almoſt continually, ſo that not a ſingle feather is miſplaced. According to Leguat, their whole appearance is noble and graceful; and this traveller even affirms that their pleaſing demeanour has often been the means of ſaving their life. If this be the caſe, and if the Solitary and the Dodo be of the ſame ſpecies, we muſt admit a very wide difference between the male and the female in regard to their figure.

This

This bird has ſome reſemblance to the turkey; its legs differ only in being taller, and the bill in being more hooked; its neck is alſo proportionally longer, the eye black and lively, the head without a creſt or tuft, and with ſcarcely any tail; its hind part, which is round like the buttocks of a horſe, is covered with broad feathers.

The wings of the Solitary Dodo do not enable it to fly; but they are not uſeleſs in other reſpects. The pinion-bone ſwells near the end into a ſpherical button, which is concealed under the feathers, and ſerves two purpoſes; in the firſt place for defence, to which the bill is alſo ſubſervient; in the ſecond, to make a kind of clapping or whirling twenty or thirty times on the ſame ſide in the ſpace of four or five minutes. In this way, it is ſaid, the male invites his mate with a noiſe like that of a keſtrel, and which is heard at the diſtance of two hundred paces.

Theſe birds are rarely ſeen in flocks, though the ſpecies is pretty numerous; ſome affirm even that ſcarcely two are ever found together *.

They ſeek unfrequented ſpots where to lay their eggs; they conſtruct their neſt with the leaves of the palm-tree heaped up a foot and a half high; into this neſt the female drops an egg much larger than that of a gooſe; and the male participates in the office of hatching.

* Hiſt. Gen. des Voyages, tome ix.

During

During the whole time of the incubation, and even that of the education, they ſuffer no bird of the ſame kind to approach within two hundred paces; and it is pretended that the male drives away the males, and that the female drives away the females, an obſervation which could hardly be made on a bird that paſſes its life in the wildeſt and the moſt ſequeſtered ſpots.

The egg (for it ſeems that theſe birds lay only one, or rather only cover one at a time) requires ſeven weeks * to hatch, and the young one cannot provide for itſelf until ſome months afterwards. During all that time it is watched with paternal care, and this circumſtance alone gives greater force to the inſtinctive affection than in the Oſtrich, which is abandoned from its birth, and never afterwards receives the foſtering aſſiduities of its parents, and, being without any intimacy with them, is deprived of the advantages of their ſociety, which, as I have elſewhere remarked, is the firſt education of animals, and which moſt of all contributes to develope their native powers; and hence the Oſtrich is conſidered as the moſt ſtupid of the feathered creation.

After the education of the young Solitary Dodo is completed, the parents ſtill continue

* Ariſtotle allows thirty days for the incubation of the large birds, ſuch as the eagle, the buſtard, and the gooſe; he does not indeed mention the Oſtrich in that place. *Hiſt. Anim.* lib. vi.

united,

united, and on the whole faithful to each other, though ſometimes they intermix with other birds of the ſame ſpecies. The care which in common they have beſtowed on the fruit of their union ſeems to rivet their attachment, and when the ſeaſon again invites, they renew their loves.

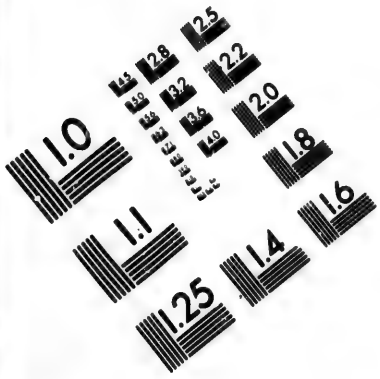
It is aſſerted, that whatever be their age, a ſtone is always found in their gizzard, as in the Hooded Dodo: this ſtone is as large as a hen's egg, flat on the one ſide and convex on the other, ſomewhat rough, and ſo hard as to be fit for a whetſtone. It is added, that it is always alone in the ſtomach, and is too bulky to paſs through the intermediate duct which forms the only communication between the craw and the gizzard; and hence it is inferred, that this ſtone is formed naturally in the gizzard of the Solitary, and in the ſame way as the bezoars. But for my part, I ſhould only conclude that this bird is granivorous, and ſwallows ſtones and pebbles like all the reſt of that claſs, particularly the Oſtrich, the Touyou, the Caſſowary, the Hooded Dodo, and that the paſſage between the craw and the gizzard admits of a greater dilatation than Leguat ſuppoſed.

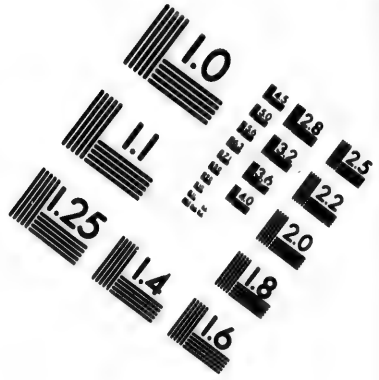
The epithet of *Solitary* alone indicates ſufficiently its native wildneſs; and this is indeed what we ſhould expect. Bred ſequeſtered without a ſingle companion, deprived of the ſociety of its equals, and connected to its parents

only by the ties of dependence and want, its latent powers are never awakened and expanded. But it appears ſtill more timid than ſavage; it even ventures to come nigh one, and with an air of familiarity, eſpecially if it has little experience, and is not ſcared by a ſudden onſet; but it can never be tamed. It is difficult to enſnare it in the woods, where it can elude the ſportſman by cunning and celerity in concealing itſelf; but as it does not run faſt, it is eaſily caught in the plains and open fields; when overtaken, it utters not a complaint, but waſtes its grief in tears, and obſtinately refuſes every kind of food. M. Caron, director of the French Eaſt India Company's affairs at Madagaſcar, put two of them, from the iſle of Bourbon, on board a veſſel, to be preſented to the Royal Cabinet, but they would neither eat nor drink, and died in the paſſage.

The proper ſeaſon for catching them is from March to September, which is the winter in thoſe countries they inhabit; it is alſo the time when they are fatteſt. Their fleſh, eſpecially when young, is of an excellent flavour.

Such is the general idea which Leguat gives of the Hermit or Solitary Dodo; and he ſpeaks not only as an eye-witneſs, but as an obſerver, who had for a long time ſtudied the habits of the bird; and, indeed, his account, though marred





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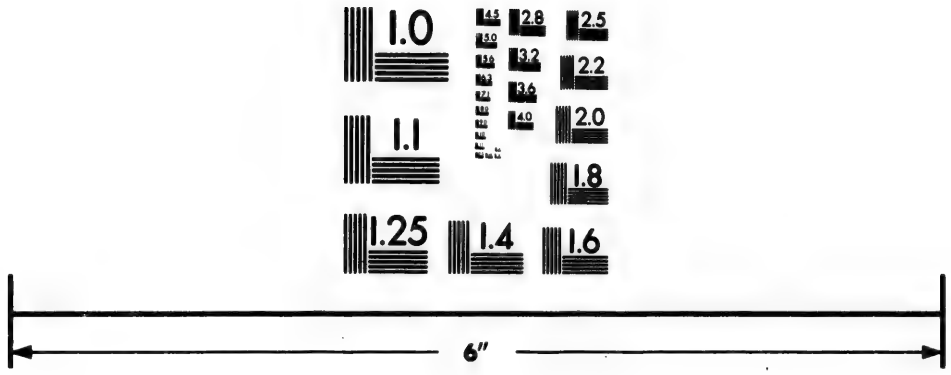

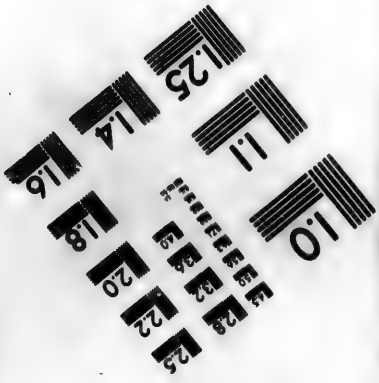

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red in ſome places with fabulous notions *, contains more hiſtorical details in regard to the Hermit than I have been able to diſcover in a crowd of writings on thoſe birds that are more generally and more anciently known. The Oſtrich has been a ſubject of diſcourſe for thirty centuries, and yet we are ſtill ignorant how many eggs it lays, and how long its incubation laſts. [A]

The Bird of Nazareth †, ſo called, no doubt, by corruption, becauſe it was found in the iſland of Nazare, was obſerved by F. Cauche in the iſland of Mauritius. It is a very large bird, and more bulky than the ſwan. Inſtead of plumage, its body is entirely covered with a black down; yet it has ſome feathers, which are black on the wings and frizzled on the rump, which ſerves for a tail; it has a thick bill, incurvated ſomewhat below; the legs tall and covered with ſcales, three toes on each foot; its cry reſembles that of a goſling, and its fleſh has a tolerable reliſh.

The female lays only one egg, which is white, and about the ſize of a halfpenny roll. Beſide

* For inſtance, he fancies a ſort of marriage ceremony is performed at the firſt congreſs of the young Hermits; the ſtory of the ſtone in the ſtomach, &c.

[A] The ſpecific character of the Solitary Dodo: "It is variegated with gray and duſky, and its feet are furniſhed with four "toes."

† The iſland of Nazare is of a higher latitude than the iſland of Mauritius, being ſeventeen degrees ſouth. . . *Deſcription de Madagaſcar, par Fr. Cauche.*

it

it, there is generally found a white ſtone of the ſize of a hen's egg; and this perhaps ſerves the ſame purpoſe with the balls of chalk which the farmers place in the neſts where they wiſh their hens to lay. The Nazare depoſits its egg on the ground in the foreſts, on ſmall heaps of graſs and leaves which it makes. When the young one is killed, a gray ſtone is found in its gizzard. The figure of this bird, it would appear from a note, is to be met with in "*the Jour-* "*nal of the ſecond Voyage performed by the Dutch* "*to the Eaſt Indies;*" and they called it the *Bird of Nauſea.* Theſe laſt words ſeem decidedly to aſcertain the identity between the ſpecies of this bird and that of the Dodo; and would indeed amount to a proof, if their deſcriptions did not mark eſſential differences, particularly in the number of their toes. But not to enter into a minute diſcuſſion, or venture to ſolve a problem, for which we are not in poſſeſſion yet of the neceſſary *data*, I ſhall barely ſtate thoſe points of reſemblance and contraſt, which may be diſcovered from a compariſon of the three deſcriptions. [A]

It readily appears then from a compariſon, that theſe three birds belong to the ſame climate, and are natives of almoſt the ſame tracts.

[A] Gmelin and Latham beſtow on this bird the appellation *Didus Nazarenus*, or *Nazarene Dodo.* They regard it as a diſtinct ſpecies from the Solitary Dodo, and as diſcriminated by being black, and having three toes on each foot.

The Hooded Dodo inhabits the Iſlands of Bourbon and the Iſle of France; the Hermit reſided in the iſland of Rodrigue, when it was a mere waſte, and has been ſeen in the Iſland of Bourbon; the Bird of Nazare has been found in that iſland and in the Iſle of France: but theſe four iſlands are contiguous to each other; and it is to be remarked, that none of the birds has ever been diſcovered on the continent.

All theſe birds reſemble each other more or leſs in point of ſize, inability to fly, the form of their wings, of their tail, and their whole body; and in all of them, one or more ſtones have been found in their gizzard, which implies that they are granivorous. In all of them, the gait is ſlow; for though Leguat does not mention that of the Hermit, we can eaſily infer from the figure which he gives of the female, that it is a ſluggiſh bird.

Finally, Comparing them two and two, we perceive that the plumage of the Hooded Dodo approaches that of the Hermit in its colour, and that of the Bird of Nazare, by its downy quality; and that theſe two laſt ree alſo in only laying and hatching a ſingle egg.

Both the Dodo and the Bird of Nazare have been conſidered as having a diſguſting appearance.

Such are the reſemblances.—The differences are as follow:—

The Hermit has the feathers on its thighs rounded at the end like ſhells; which proves that

that they are true feathers, ſuch as thoſe of ordinary birds, and not a kind of down, as is the caſe with the Hooded Dodo and the Bird of Nazare.

The female Hermit has two white tufts of feathers on its breaſt; nothing ſimilar is mentioned in regard to the female of the two others.

In the Hooded Dodo, the feathers which border the baſe of the bill are diſpoſed in the ſhape of a cowl; and the appearance is ſo ſtriking, that it has given foundation for its characteriſtic name (*Cycnus Cucullatus*). Beſides, the eyes are placed in the bill, which is no leſs remarkable; and we cannot doubt that Leguat ſaw nothing like this in the Hermit, ſince he only mentions with regard to that bird, which he had viewed ſo often, that there is neither creſt nor tuft on its head; and Cauche, in ſpeaking of the Bird of Nazare, takes no notice of any thing of this kind.

The two laſt are tall; but the Hooded Dodo has very thick ſhort legs.

The Hooded Dodo and the Hermit, whoſe legs are ſaid to reſemble thoſe of the turkey, have four toes, and the Bird of Nazare, according to Cauche, has only three.

The Hermit makes a remarkable beating with its wings, which has not been obſerved in the others.

Laſtly, It appears that the fleſh of the Hermits, and eſpecially of the young ones, is ex-

cellent; that of the Bird of Nazare indifferent, and that of the Hooded Dodo, bad.

If this compariſon, which has been made with the greateſt accuracy, does not allow us to decide on the queſtion propoſed, it is becauſe theſe obſervations are neither ſufficiently numerous nor certain. It is therefore to be wiſhed, that thoſe travellers, and particularly thoſe naturaliſts, who have it in their power, would examine theſe three birds, and form an exact deſcription of them, attending chiefly to the following points:

The ſhape of the head and bill.

The quality of the plumage.

The form and dimenſions of the feet.

The diſtinguiſhing marks between the male and female.

The differences between the chicks and adults.

Their manner of walking and running.

Adding as much as poſſible of what can be learnt from the natives reſpecting their pairing, copulating, building their neſt, and hatching.

The number, ſhape, colour, weight, and bulk of their eggs.

The time of incubation.

The manner of rearing their young.

Their mode of feeding.

Finally, The form and dimenſions of their ſtomach, of their inteſtines, and of their ſexual organs.

NOTES

NOTES

By the TRANSLATOR.

Vol. I. Page 12. Line 13. [*Denſity of the Air.*]

THE obſervation of our ingenious author, that ſound is much more audible during the night than in the heat of the day, is curious and intereſting; but the reaſon which he aſſigns for it, though ſpecious, appears to be altogether inadequate to the effect. Air expands one-four-hundredth of its bulk for every degree of heat on Fahrenheit's ſcale; and therefore, ſuppoſing the difference of temperature between the night and the day to be twenty degrees, which is a very large allowance, the variation of the air's denſity would not exceed one-twentieth; a quantity too ſmall ſurely to be diſtinctly perceived. The atmoſphere often undergoes greater changes even in ſerene weather; and an equal difference would take place in aſcending one thouſand four hundred feet from the ſurface; yet in neither of theſe caſes are we conſcious of any alteration in the force of ſound. Much undoubtedly muſt be aſcribed to the ſtillneſs and obſcurity of the night, when the exerciſe of the other ſenſes is in a manner ſuſpended, and that of hearing engages almoſt the whole attention. During the meridian heats, alſo, various noiſes, the warble of birds, the hum of inſects, and the chearing calls of rural labour, at once aſſail the ear, and render that organ leſs ſuſceptible to other

other impreſſions. But there is another cauſe which ſeems generally to have been over-looked, though I am convinced that it contributes moſt of all to the effect.

The vivacity of the intimation given by the ſenſes depends not ſo much upon the force of the impreſſion as upon its ſimplicity and diſtinctneſs. Hence, in high winds, ſound is heard at only a ſhort diſtance, becauſe the aërial undulations are then diſturbed and confounded. In calm weather, too, when the ſky is clear, and the ſun-beams act fiercely on the ſurface of the earth, the heated air continually aſcends, and this inteſtine motion deranges the undulations in their horizontal progreſs. After the cloſe of the day, an equilibrium of temperature is again eſtabliſhed between the higher and lower ſtrata of the atmoſphere, which, during the tranquillity of the night, receives and propagates diſtinctly every impreſſion.

Vol. I. Page 20. Line 8. [*Specific Gravity of Birds.*]

THE lightneſs of the feathers and the hollowneſs of the bones of birds have generally been aſſigned as the chief cauſes of the rapidity of their flight. And ſome naturaliſts, giving reins to their imagination, have alleged, that, as the cavities are filled with a ſort of inflammable gas, theſe animals are buoyed up in the atmoſphere like balloons. Such reaſonings are not ſuperficial merely, they are abſurd. The ſpecific gravity of quadrupeds is hardly inferior to that of water, and therefore about nine hundred times greater than that of air; and admitting that in birds an equal quantity of matter occupies a triple ſpace, which is ſurely an ample conceſſion, they would loſe

loſe only the three-hundredth part of their weight at the ſurface of the earth, and ſtill leſs in the ſuperior regions of the atmoſphere. Will any perſon inſiſt on the efficacy of ſo trifling a cauſe? Nay, the diminiſhed gravity of birds, far from aſſiſting their flight, produces the oppoſite effect in a very high degree; for the reſiſtance of the air, the great impediment to their motion, is proportioned, when other circumſtances are alike, to the extent of ſurface which they preſent. This obſervation is remarkably exemplified in the Bird of Paradiſe, which is clothed with ſuch a profuſion of feathers, that it cannot face the gentleſt gale, but is carried involuntarily into the ſtream.

The obſtruction which birds encounter in their flight, is much more conſiderable than might at firſt be apprehended: and this poſition is evinced by a very obvious fact:—Moſt ſpecies fly apparently with equal eaſe, whether before or againſt a moderate wind, and therefore the ſtroke of the blaſt is greatly inferior to the ordinary reſiſtance experienced in their paſſage through the air.

The rapid flight of birds reſults wholly from the prodigious power exerted by their large pectoral muſcles. This force may be reſolved into two portions; the one employed in ſupporting the birds in the air, the other in impelling it through that reſiſting medium. The former is conſtant, and proportioned to the maſs; the latter depends on a variety of circumſtances,—the quantity of ſurface, the ſhape, the velocity, and the denſity of the ſurrounding element. The relative proportion of theſe two forces muſt therefore vary extremely. In very large birds, their cumbrous weight can hardly be borne up, while their quantity of ſurface, which is comparatively ſmall,

occaſions

occaſions not any conſiderable obſtruction to their motion. It is thus that the Oſtrich ſupports her body by means of her feet, and carries herſelf forward chiefly by the action of her wings. On the other hand, the ſurface is ſo great in proportion to the weight in very ſmall birds, that almoſt their whole exertions are employed in overcoming the reſiſtance of the air. If they intermit the ſtrokes of their wings, the motion they have acquired is quickly extinguiſhed: thence the ſudden deflections which diſtinguiſh their flight. Of this, a remarkable inſtance is the Humming Bird, which, for its fluttering irregular progreſs, has been aptly compared to the humble-bee.

Nothing contributes ſo much to facilitate the motion of Birds through the air, as the acuteneſs of the angle formed between their ſhoulders and their bill. For that reaſon, they extend their head, and endeavour to give their body as taper a ſhape as poſſible. Hence alſo, the birds which are moſt remarkable for their fleetneſs, have generally long necks; ſuch are moſt of the ſea-fowl, which undoubtedly exerciſe their wings more than thoſe of the land.

The reſiſtance which a body ſuffers in its paſſage through a fluid is proportional to the ſquare of the velocity. In ſlow motions, therefore, it is inconſiderable, but accumulates moſt aſtoniſhingly with an increaſe of celerity. Hence birds that differ widely in point of ſtrength, fly pretty nearly with the ſame rapidity; for it would require four times the force to give double the velocity, nine times to give the triple, and ſo forth. We likewiſe ſee the reaſon why the difference is not very great between the ordinary flight of a bird, and that wherein it exerts itſelf to the utmoſt.

In

In ſimilar caſes the force neceſſary to impel a bird through the air is proportioned to the denſity of that medium. It will fly therefore with moſt eaſe in the higher regions of the atmoſphere; but this advantage is modified, and often over-balanced, by another circumſtance. The weight of the bird requires conſtantly the ſame force to ſupport it; and this force, in the preſent inſtance, can be produced only by the greater celerity of ſtroke; a condition which is not always compatible with the ſtructure of the animal. This inconvenience will be chiefly felt by the larger ſpecies of birds, which, for that reaſon, can never riſe to any vaſt height. The little tribes, on the contrary, are invited to ſoar far beyond the region of the clouds, where they glide with wonderful facility. What alone ſeems to ſet bounds to their aſcent, is the cold which prevails at thoſe heights. And this influence is not ſo great as might at firſt be apprehended; for a ſtream of rarefied air operates ſlowly in robbing a body of its heat, and therefore gives a weak ſenſation of cold. It is extremely probable that ſmall birds riſe three or four miles into the air, where that fluid has only half the denſity that obtains at the ſurface. At that height the cold will indeed be ſixty degrees; but its effects will be equivalent to a cold of only thirty degrees at the ſurface of the earth; which is leſs than the difference that often happens between the temperature of our ſpring and that of our ſummer. The care of providing food commonly detains them indeed near the ſurface; but when they retire into other climates, they mount to the lofty regions of the atmoſphere, and purſue their arduous journey far beyond the reach of human ſight. No wonder then that the migrations of the ſmall birds ſhould have given occaſion to ſo much

much diſputation; while thoſe of the larger ſpecies, ſuch as the Gooſe, the Stork, and the Crane, have been univerſally admitted.

As a bird in flying is actuated by two forces, the one impelling it upwards, the other forwards; the ſtroke of its wing muſt be performed in an oblique direction, between the vertical and the horizontal; and it will be more inclined to the latter in proportion to the ſmallneſs of the bird, and the ſwiftneſs of its motion. This is manifeſt in the caſe of Pigeons, which are ſo noted for their rapid flight. The poſition of the tail alone might indeed determine the direction of a bird's track; but that expedient would be attended with an expence of force which Nature has employed with ſuch frugality. In ſhort, it is extremely probable, that from obſerving the inſertion of the wings, a phyſiologiſt could infer with tolerable accuracy, the uſual rate at which a bird flies.

Birds often ſeem to reſt ſuſpended in the air; but the appearance is illuſory, for the force required to ſupport them is in every caſe the ſame. Either they ſuffer themſelves to ſink gently on their expanded wings through a certain ſpace, and then by a few lengthened ſtrokes, recover their former ſtation; or they maintain their place by the nimble and vigorous quivering of their pinions, which is frequently diſcernible.

The tail of a bird has often been compared to the rudder of a ſhip; but the analogy is incomplete; for the motion of a ſhip is confined invariably to the ſame plane, while that of a bird is performed in every poſſible direction. The poſition of the tail affects only the angle of aſcent or deſcent; it is the inclination of the head which turns the courſe to the one ſide or the other.

The

The remarkable hollowneſs of the bones, particularly thoſe of the wings, though it by no means contributes to the effect aſcribed to it in the text, is ſubſervient to ſeveral very uſeful purpoſes. It adds greatly to the ſtrength of the bones; and this principle ſeems to have directed Nature in many of her animal and vegetable productions. Were the ſtalks, for inſtance, of tall ſlender plants compacted into a ſolid form, they would be unable to reſiſt the ſmalleſt violence. As the cavities of the bones in birds communicate with the lungs, they muſt conſpire to form and augment the voice. Analogy clearly leads to this concluſion, ſince the *antrum*, or ſmall cavity near the bottom of the frontal bone, at the origin of the noſtrils, is found by experience to aſſiſt the human voice. But the moſt eſſential uſe of the hollowneſs of the bones is, perhaps, to afford an ample ſurface for the inſertion of the powerful muſcles.

Feathers, like the fly in mechanics, ſerve to equalize the motion of birds, but at a great expence of force. Their principal uſe, however, is certainly to confine the animal warmth which is generated, or rather evolved, by the proceſs of reſpiration. Looſe ſpungy ſubſtances, ſuch as cotton, hair, wool, and particularly feathers, are ſlow conductors of heat, and therefore admirably calculated for the purpoſe of clothing. The waſte of vital heat on the ſurface of the body is occaſioned by the ſucceſſive contact of air, and proportioned to the quickneſs of the application. It is hence that a ſtrong wind will, even in temperate weather, affect us with ſenſations of cold, though we often feel very comfortable during hard froſt, when the air is ſtill. Birds therefore, more than any other animals, muſt be expoſed to this waſte of heat;

heat; and accordingly they are clothed with a thicker and richer garb. We may alſo remark, that ſmall birds are for their ſize better feathered than large ones, as the ſurface which they expoſe to the cooling ſtream of air is proportionally greater. It is thus that Nature kindly ſuits her proviſions to the wants of her creatures. Man alone is ſent into the world naked and helpleſs, and perpetually urged by his neceſſities to the exerciſe and cultivation of his faculties. This view of the utility of phyſical evil is finely illuſtrated by the elegant Virgil.

" ——————— Pater ipſe colendi
Haud facilem eſſe viam voluit, primuſque per artem
Movit agros, *curis acuens mortalia corda:*
* * * *
Ille malum virus ſerpentibus addidit atris,
Prædarique lupos juſſit, pontumque moveri,
Mellaque decuſſit foliis, ignemque removit,
Et paſſim rivis currentia vina repreſſit:
Ut varias uſus meditando extunderet artes
Paulatim, et ſulcis frumenti quæreret herbam,
Et ſilicis venis abſtruſum excuderet ignem.

GEOR. *Lib. I.* 129.

The ſire of gods and men, with loud decrees,
Forbids our plenty to be bought with eaſe;
And wills that mortal men, inur'd to toil,
Should exerciſe, with pains, the grudging ſoil.
* * * *
Jove added venom to the viper's brood,
And ſwell'd with raging ſtorms the peaceful flood:
Commiſſion'd hungry wolves t' infeſt the fold,
And ſhook from oaken leaves the liquid gold.
Remov'd from human reach the cheerful fire,
And from the rivers bade the wine retire:
That ſtudious need might uſeful arts explore,
From furrow'd fields to reap the foodful ſtore;
And force the veins of claſhing flints t' expire
The lurking ſeeds of their celeſtial fire.

DRYDEN.

END OF THE FIRST VOLUME.